DOCUMENT RESUME

ED 146 401 CE 013 366

AUTHOR	Rogers, Helen V.
TITLE	Nursing II. A Course of Study.
INSTITUTION	Oklahoma State Dept. of Vocational and Technical Education, Stillwater. Curriculum and Instructional Materials Center.
SPONS AGENCY	Oklahoma State Board of Vocational and Technical Education, Stillwater. Div. of Health Occupations Education.
PUB DATE	75
NOTE	1,642p.; For related documents see CE 013 366, CE 013 372, and ED 136 837
AVAILABLE FROM	Oklahoma State Department of Vocational-Technical Education, Curriculum and Instructional Materials Center, 1515 West Sixth, Stillwater, Oklahoma 74074 ($20.00)
EDRS PRICE	MF-$3.00 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS	Behavioral Objectives; Child Care; *Course Content; Curriculum Guides; Drug Therapy; Health Occupations; Health Occupations Education; Health Personnel; Hospital Personnel; Instructional Materials; Job Skills; Learning Activities; *Medical Education; Medical Treatment; Neonates; Nurses; *Nursing; Pediatrics Training; Performance Specifications; Practical Nurses; *Practical Nursing; Task Performance; Tests; *Units of Study; Visual Aids
IDENTIFIERS	Oklahoma

ABSTRACT

Developed primarily to provide a course of study requisite for the second area of a two-part practical nursing program, this curriculum guide can also be used to instruct nursing students in other programs. The content is divided into five major areas of study which include medications, nursing principles and skills (part two), maternal and infant care, nursing of children, and medical surgical nursing (part one). Each major area consists of three or more units of instruction. Each of the forty-three instructional units contains both terminal and specific behavioral objectives, suggested activities for teacher and students, information sheets, assignment sheets and/or job sheets, visual aids, tests, and answers to the tests. Units are planned for more than one lesson or class period of instruction. A reference list is also included in each unit. (BM)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED146401

NURSING II

A Course of Study

Helen V. Rogers, Curriculum Writer
State Department of Vocational and Technical Education
Stillwater, Oklahoma

"PERMISSION TO REPRODUCE THIS MATERIAL BY MICROFICHE ONLY HAS BEEN GRANTED BY
Flo Eubanks

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND THE ERIC SYSTEM CONTRACTORS."

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

CE013366

Developed by the
Curriculum and Instructional Materials Center
For the Division of Health Occupations Education
Patricia Jamison, State Supervisor
Oklahoma State Board of Vocational and Technical Education
Leslie Fisher, Chairman
Francis T. Tuttle, Director
Ronald Meek, Coordinator, Curriculum and Instructional Materials Center
1975

Copyright - 1975
Curriculum and Instructional Materials Center

Edited and Distributed by the
State Department of Vocational and Technical Education
Stillwater, Oklahoma 74074

TABLE OF CONTENTS

Section A--Medications

Unit I Introduction to Pharmacology . . . . N II - 1-A
Unit II Responsibility of the Practical Nurse in the Administration of Medication . . . . N II - 29-A
Unit III Weights, Measures, and Abbreviations . . . . N II - 51-A
Unit IV Computing Dosages . . . . N II - 93-A
Unit V Preparation of Solutions . . . . N II - 131-A
Unit VI Effects of Drugs . . . . N II - 151-A
Unit VII Administration of Medications . . . . N II - 175-A
Unit VIII Syringes and Needles . . . . N II - 211-A
Unit IX Administration of Parenteral Medications . . . . N II - 237-A
Unit X Administration of Insulin . . . . N II - 309-A
Unit XI Other Methods for Administering Medications . . . . N II - 333-A
Unit XII Charting Medications . . . . N II - 363-A

Section B--Nursing Principles and Skills II

Unit I Surgical Asepsis . . . . N II - 1-B
Unit II Ventilation . . . . N II - 45-B
Unit III Administration of Oxygen . . . . N II - 81-B
Unit IV Urinary Catheterization . . . . N II - 147-B
Unit V The Indwelling Catheter . . . . N II - 189-B
Unit VI Isolation Technique . . . . N II - 229-B
Unit VII Preoperative and Postoperative Care . . . . N II - 265-B
Unit VIII Terminal and Postmortem Care . . . . N II - 313-B
Unit IX Planning Nursing Care . . . . N II - 337-B

Section C--Maternal and Infant Care

Unit I Introduction to Maternal and Infant Care . . . . N II - 1-C
Unit II Pregnancy and Prenatal Care . . . . N II - 37-C
Unit III Care of the Patient in Labor . . . . N II - 125-C
Unit IV Care of the Patient in the Delivery Room . . . . N II - 197-C
Unit V Care of the Postpartum Mother . . . . N II - 251-C
Unit VI Care of the Normal Newborn . . . . N II - 303-C
Unit VII Caring for the Premature Infant . . . . N II - 339-C
Unit VIII Caring for the Newborn with Abnormalities . . . . N II - 365-C

Section D--Nursing of Children

Unit I Introduction to Nursing of Children . . . . N II - 1-D
Unit II Growth and Development of the Infant . . . . N II - 19-D
Unit III Caring for the Hospitalized Infant . . . . N II - 75-D
Unit IV Growth and Development of the Toddler . . . . N II - 139-D
Unit V Caring for the Hospitalized Toddler . . . . N II - 169-D
Unit VI Growth and Development of the Preschool Child . . . . N II - 229-D

Unit VII Caring for the Hospitalized Preschool Child . . . . N II - 253-D
Unit VIII Growth and Development of the School-Age Child . . . . N II - 301-D
Unit IX Caring for the Hospitalized School-Age Child . . . . N II - 323-D
Unit X Growth and Development of the Adolescent . . . . N II - 381-D
Unit XI Caring for the Hospitalized Adolescent . . . . N II - 407-D

Section E--Medical Surgical Nursing

Unit I Introduction to Medical Surgical Nursing . . . . N II - 1-E
Unit II Nursing the Female Patient with Diseases of the Reproductive System . . . . N II - 51-E
Unit III Caring for the Patient with Diseases of the Respiratory System . . . . N II - 117-E

FOREWORD

This publication provides a course of study requisite for the second area of the practical nursing program. It continues an articulated curriculum designed to facilitate career mobility in the health occupations and includes Medications, Nursing Principles and Skills II, Maternal and Infant Care, Nursing of Children, and Medical Surgical Nursing I. While primarily developed to serve the second area of practical nursing instruction, the content and flexible arrangement of materials are equally appropriate to the instruction of nursing students in other programs.

The purpose of the curriculum is to enhance the quality of health occupations education programs by providing instructors with assistance in the organization and presentation of materials to maximize learning experiences. It is hoped that this provision of commonalities and continuities in nursing education will also be of value to the student through career development opportunities and credit for previous knowledge and experience by advanced standing in ongoing programs.

The dedicated committee members responsible for the development of this course of study sincerely believe that, ultimately, society will benefit through expanded health services and better patient care.

Patricia Jamison, State Supervisor
Health Occupations Education

PREFACE

Nursing and other health occupations have been undergoing great changes since 1965 when major health legislation was begun at the federal and state levels of government. In order to meet the growing health needs of our communities, curriculum must be constantly revised and rewritten.

Much effort has been made by the Health Occupations Curriculum Committee to make this publication basic, readable, and usable. This publication does not cover every area of health occupations education, but it is intended to provide the basics of nursing as well as the opportunity for the student to continue education in the chosen field.

These materials are constructed to allow the instructor to adapt the material as desired. It is the responsibility of the instructor to supplement this publication as necessary to meet the needs of the students, the institution, and the community.

After using this curriculum publication, it is hoped that each instructor will realize the effectiveness of this approach to teaching. Because all resource material focuses toward a measurable outcome, the student should be able to achieve a higher level of performance.

Helen Rogers
Health Occupations Curriculum Writer

ACKNOWLEDGMENTS

Appreciation is extended to those individuals who contributed their time and talents to the development of this curriculum.

The content of this publication was planned and reviewed by:

Health Occupations Teachers

Neysa Davis	Canadian Valley Area Vocational-Technical School
Doris Golab	Oklahoma City Skills Center
Lou Ebrite	Oklahoma City School of Practical Nursing
Doris Smith	Kiamichi Area Vocational-Technical School
Herman Reisenberg	OSU Technical Institute
Stella Wetz	Indian Capital Area Vocational-Technical School
Sue Mitchell	Woodward Vocational School of Practical Nursing
Margaret McLain	Oklahoma City Skills Center
Pearl Hill	Gordon Cooper Area Vocational-Technical School
Shirley Davis	Oklahoma City School of Practical Nursing

State Department of Health Occupations Education Staff

Patricia Jamison

Yvonne Bender

Other contributions:

Appreciation is extended to those who helped with special consultation. These include: Irene Clements, Assistant Coordinator of Curriculum and Instructional Materials Center; Ann Benson, Executive Director of Mid America Vocational Curriculum Consortium; and Harry Wetz, Oscar Rose Junior College.

Gratitude is expressed to Sheila Stone for editing; to Nancy Skach, Flo Eubanks, and Debbie Burchette for assistance with research; and to Cindy Johnson and the Communications Center for typing.

Special appreciation goes to Bob Rea, Manager of Art and Layout; Beth Burns, Paste-up Artist; and Mike Adair and Dean Clark, Illustrators, for the illustrations and drawings used in this publication.

The Graphics Division of the State Department of Vocational and Technical Education under the supervision of Bob Patton are deserving of much credit for printing this publication.

INTRODUCTION TO PHARMACOLOGY
UNIT I

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list purposes and sources of drugs and name books which describe drug preparations. The student should be able to match terms with definitions and historical events and drugs to their correct descriptions. This knowledge will be evidenced by scoring eight-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with basic pharmacology to the correct definitions.
2. Match historical events or persons to the correct descriptions.
3. List four purposes for which drugs are used and two examples of each.
4. List four sources of drugs and an example of each.
5. Describe the four names a drug may have.
6. Discuss standardization of drugs.
7. Name two official or legal standard books listing drugs.
8. Name three additional books which are sources of information about drugs.
9. Match laws or services that aid in the control of drugs to their correct descriptions.
10. Match forms of drugs to the correct descriptions.
11. Use drug reference books.

INTRODUCTION TO PHARMACOLOGY
UNIT I

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information and assignment sheets.

  C. Discuss terminal and specific objectives.

  D. Discuss information and assignment sheets.

  E. Prepare a display or poster showing the different forms of drugs, such as pills, capsules, tablets, enteric-coated tablets, and other forms available to the instructor.

  F. Provide reference books for use in completing the assignment sheet. Add to or omit names of drugs on the assignment sheet as desired.

  G. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Observe display of drug forms.

  D. Participate in discussion.

  E. Complete assignment sheet.

  F. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Assignment Sheet #1--Use Drug Reference Books

  D. Test

  E. Answers to test

II. References:

A. Falconer, Mary W. et al. *The Drug, The Nurse, The Patient.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1974.

B. Fuerst, Elinor V. et al. *Fundamentals of Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1974.

C. Squire, Jessie E. and Jean M. Welch. *Basic Pharmacology for Nurses.* St. Louis, Missouri: The C. V. Mosby Company, 1973.

D. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

INTRODUCTION TO PHARMACOLOGY
UNIT I

INFORMATION SHEET

I. Terms and definitions

  A. Pharmacology--Study of the actions of drugs on living organisms

  B. Pharmacy--Profession or place of preparing and dispensing drugs

  C. Drug--Medication; chemical or other substance intended to have a therapeutic effect

  D. Pharmacist--Person licensed to practice pharmacy

  E. Drug misuse--Use of any substance which affects mood or behavior to the extent that such use does physical, mental, or social harm

  F. Prescription--Physician's medication order

  G. Dosage--Amount of medicine to be administered to a patient at one time

  H. Materia medica--Study of the sources, physical characteristics, composition, preparation, dosage, and effects of the substances used in treating the sick

  I. Chemotherapy--Treatment of illness by chemical means (by medication)

  J. Pharmacopeia--Book containing a selected list of medicinal preparations and their dosage forms; provides a description and the standards for purity and strength for each drug listed

  K. Antibiotic--Chemical compound produced by and obtained from a living organism or cell; able to inhibit or kill other microorganisms

  L. Biologic products--Medicinal preparations made from living organisms and their products, including serums, vaccines, antigens, and antitoxins

  M. Volatile--Easily vaporized or evaporated

II. History

  A. Primitive medicine man--Used herbs and vile-tasting concoctions to drive out evil spirits

  B. Ebers papyrus--Egyptian scroll written about 1600 B.C. describing many prescriptions and medicinal formulas

  (NOTE: Some drugs described in the Ebers papyrus that are still in use today are castor oil, peppermint, opium, and henbane or hyoscyamus.)

INFORMATION SHEET

C. Moses--Set forth one of the earliest codes of sanitation

D. Peruvians--Used cinchona, which is similar to quinine, to treat malaria; used coca, from which cocaine is derived, to relieve pain

E. Hindus--Used Rauwolfia to calm the restless and treat heart disease

(NOTE: Derivatives of Rauwolfia are used as antihypertensives in modern medicine.)

F. Hippocrates--Greek physician of fifth century B.C. who is called the "Father of Medicine"

G. Aesculapius--God of healing in Roman mythology

(NOTE: The staff of Aesculapius is the official insignia of the American Medical Association.)

H. Galen--Greek physician of the second century A.D. whose observations and writings influenced medicine for many centuries

(NOTE: Seventy of the six hundred drugs he described are still listed in present pharmacopeias.)

I. Arabians--Advanced the science of medicine and pharmacy in the ninth and tenth centuries A.D.; compiled the first pharmacopeia

J. First pharmacopeia in Britain--Published in London in 1618; included 1900 remedies; based largely on the works of Galen and the Arabian physicians

K. First national pharmacopeia--The French Codex published in 1818

L. First American pharmacopeia--Published in 1820

M. Edward Jenner--English physician who discovered the principle of smallpox vaccination in 1796

N. Louis Pasteur--Developed preventive innoculations for rabies, chicken cholera, and anthrax (1822-1895)

O. Lord Lister--Founder of modern antiseptic surgery in London in the 1860s

P. Madame Curie--Discovered radium in 1893

Q. Wilhelm Roentgen--Discovered the x-ray in 1895

R. Banting and Best--First used insulin in treating diabetes in Canada in 1922

INFORMATION SHEET

S. Sir Alexander Fleming--Discovered penicillin by accident in 1929

(NOTE: It was first used for humans in Britain in 1941 and in the United States in 1942.)

T. Salk and Sabin--Discovered polio vaccines in 1955 and 1961 respectively

III. General purposes for which drugs are used

A. Diagnosis

Examples

1. Barium sulfate used in taking x-rays of gastrointestinal tract
2. Dyes used to x-ray internal organs
3. Ferric chloride test for phenylketonuria

B. Treatment of symptoms

Examples

1. Analgesics to relieve pain
2. Antipyretics to decrease temperature
3. Local anesthetics to relieve or prevent pain

C. Treatment of diseases or dysfunctions

Examples

1. Antibiotics internally for specific infections
2. Topical ointments for dermatitis
3. Hormone therapy such as insulin for diabetes mellitus

D. Prevention of disease

Examples

1. Vaccines such as smallpox or polio
2. Serums such as gamma globulin
3. Antitoxins such as diphtheria or tetanus

INFORMATION SHEET

IV. Sources of drugs

A. Animal

Examples

1. Thyroid extract
2. Insulin
3. Adrenalin
4. Cortisone

B. Plant

Examples

1. Digitalis from purple foxglove
2. Castor oil from castor beans
3. Iodine from kelp or seaweed
4. Morphine or codeine from the white poppy

C. Mineral

Examples

1. Diluted hydrochloric acid
2. Epsom salts
3. Calcium
4. Sodium bicarbonate

D. Synthetic or chemical

Examples

1. Antibiotics--Streptomycin, penicillin
2. Sulfa drugs--Gantrisin, sulfadiazine
3. Synthetic steroids--Cortisone, prednisone
4. Hypoglycemics--Tolbutamide, chlorpropamide

INFORMATION SHEET

V. Naming of drugs

  A. Generic

    1. Given to the drug before it becomes official by the company that develops it

    2. Processed by the American Medical Association Council on Drugs

    3. First letter not capitalized

    4. Universally used

  B. Official

    1. Used for a drug in one of the official publications

    2. May or may not be the same as the generic name

    3. First letter not capitalized

  C. Chemical

    1. Usually meaningful chiefly to the chemist

    2. Exact chemical formula of the drug

    3. First letter not capitalized

  D. Trade

    1. May be called trademark, brand, or proprietary name

    2. Symbols TM or Ⓡ are used at the upper right of the name indicating it is registered and its use is restricted to the company which owns it

       (NOTE: Some trade names are Acnederm™ Lotion, Benadryl®, and Benadryl® Elixir.)

    3. Deliberately made easier to pronounce, spell, and remember than the generic and chemical names

    4. First letter capitalized

Example: Generic and official name--tetracycline

Chemical name--tetracycline hydrochloride

Trade names--Achromycin®, Cyclopor®, Panmycin®, Tetracyn®

INFORMATION SHEET

VI. Standardization of drugs

- A. Drug standards are essential to guarantee the strength and purity of medicines
- B. Purity and strength are determined by
  1. Physical examination for foreign or extraneous ingredients
  2. Chemical analysis

     (NOTE: This is the basic method for determining purity and strength of drugs whose chemical composition is known.)
  3. Biological assay

     (NOTE: When the chemical composition of a drug is unknown, the drug is administered to a laboratory animal under controlled conditions and the effect of the drug is carefully observed.)
  4. Clinical assay

     (NOTE: After much research, a new drug is used cautiously on a human patient in a controlled environment. Drugs do not always produce the same effect on humans as on animals.)
- C. Standards of strength and purity are set by an association of physicians, pharmacists, and scientists

  (NOTE: This association is the United States Pharmacopeial Convention.)
- D. Drug standards are enforced by the Food and Drug Administration

VII. Official or legal standard books for drugs

- A. *United States Pharmacopeia (U.S.P.)*

  (NOTE: Detailed information is given under the official name of only those drugs which conform to the *U.S.P.* standards. The publication is revised every five years with the older and less used drugs deleted and newer ones added.)
- B. *National Formulary (N.F.)*

  (NOTE: This publication, sponsored by the American Pharmaceutical Association, is revised during the same year as the *United States Pharmacopeia.* It contains descriptions of drug formulas and single drugs, lists some drugs deleted from the *U.S.P.*, and provides standards for older drugs.)

INFORMATION SHEET

VIII. Additional sources of drug information

A. *United States Dispensatory and Physician's Pharmacology*

(NOTE: This encyclopedia is published by J. B. Lippincott Company and contains detailed descriptions of drugs listed in *U.S.P.* and *N.F.*, those not listed in official books, and drugs used in veterinary practice.)

B. *American Hospital Formulary Service*

(NOTE: This annual publication of the American Society of Hospital Pharmacists lists dosage forms most commonly used in hospitals.)

C. *Current Drug Handbook*

(NOTE: Published by the W. B. Saunders Company, it lists by generic and major trade names around 1500 drugs in general use.)

D. *Drugs in Current Use and New Drugs*

(NOTE: It is published annually by the Springer Publishing Company.)

E. *Physicians' Desk Reference (PDR)*

(NOTE: This comprehensive and detailed book is published annually by Medical Economics, Inc.)

IX. Drug legislation and control

A. Pure Food Act--Listed eleven narcotic and habit-forming drugs; required labeling of any preparation containing these drugs; prohibited the making of false claims about medicines (1906)

B. Federal Food, Drug, and Cosmetic Act--Provided strict regulation of the manufacture, safety, effectiveness, sale, and use of drugs; amended several times (1938)

C. Harrison Narcotic Act--Regulated the importation, manufacture, sale, and use of opium, cocaine, and all their compounds and derivatives (1914)

D. Controlled Substance Act--Regulates the use of narcotics, amphetamines, amphetamine-like compounds, barbiturate and narcotic drugs, as well as those drugs which have no accepted medical use including heroin, marijuana, and LSD (1970)

E. Food and Drug Administration--Enforces laws concerning food and drugs; receives and correlates reports from pharmaceutical firms and others concerning adverse effects of drugs

INFORMATION SHEET

F. Public Health Service--Part of the Department of Health, Education, and Welfare; regulates the use of biologic products

G. Federal Trade Commission--Federal agency directly responsible to the president; has the power to suppress false or misleading advertising

X. Forms of drugs

A. Solid

1. Extract--Concentrated solid preparation of drugs made by dissolving a crude drug in a solvent, allowing the solution to evaporate, and forming the sediment into tablets or capsules

2. Powder--Medicinal preparation in fine particles

3. Pill--Drug shaped in small balls or ovals; may be coated to disguise the taste

4. Capsule--Small, cylindrical gelatin container filled with powder or granules

5. Tablet--Dried, powdered drug pressed into a flat disc

6. Suppository--Mixture of drugs in a firm base such as glyceride or vegetable fat which melts at body temperature

7. Ointment--Mixture of drugs in an oily base which spreads easily at body temperature

8. Lozenge--Flat disc containing a drug and a sweetening agent, usually sugar

B. Liquid

1. Fluidextract--Concentrated liquid preparation made by dissolving a crude plant drug in an appropriate solvent

(NOTE: Usually, one cc of fluidextract contains one gram of the drug.)

2. Tincture--Diluted alcoholic extract of drugs; strength varies, usually from ten to twenty percent

3. Spirit--Volatile preparation of drugs dissolved in alcohol

4. Syrup--Drug prepared in sugar and water solution

5. Elixir--Palatable preparation of drugs dissolved in a mixture of alcohol, sugar, and an aromatic

INFORMATION SHEET

6. Suspension--Liquid mixture with ingredients which tend to separate

7. Milk--Bulky suspension of drug preparations in a solvent, usually water

8. Emulsion--Suspension of oily or fatty substances in water

9. Liniment--Mixture of drugs with soap, oil, water, or alcohol to be used for external application only

10. Lotion--Preparation of drugs suspended in an aqueous solution

INTRODUCTION TO PHARMACOLOGY
UNIT I

ASSIGNMENT SHEET #1--USE DRUG REFERENCE BOOKS

Using one or more of the standard reference books, look up the following list of drugs. Report the kind of information given about each.

1. Penicillin
2. Aspirin
3. Caffeine
4. Quinine
5. Equanil
6. Feosol elixir
7. Insulin
8. Rubella vaccine
9. Vitamin C
10. Seconal

INTRODUCTION TO PHARMACOLOGY
UNIT I

TEST

1. Match the terms on the right to the correct definition.

_____a. Study of the actions of drugs on living organisms

_____b. Profession or place of preparing and dispensing drugs

_____c. Medication; chemical or other substance intended to have a therapeutic effect

_____d. Person licensed to practice pharmacy

_____e. Use of any substance which affects mood or behavior to the extent that such use does physical, mental, or social harm

_____f. Physician's medication order

_____g. Amount of medicine to be administered to a patient at one time

_____h. Study of the sources, physical characteristics, composition, preparation, dosage, and effects of the substances used in treating the sick

_____i. Treatment of illness by chemical means (by medication)

_____j. Book containing a selected list of medicinal preparations and their dosage forms; provides a description and the standards for purity and strength for each drug listed

_____k. Chemical compound which is produced by and obtained from a living organism or cell; able to inhibit or kill other microorganisms

_____l. Medicinal preparations made from living organisms and their products, including serums, vaccines, antigens, and antitoxins

1. Drug misuse
2. Materia medica
3. Antibiotic
4. Pharmacology
5. Volatile
6. Dosage
7. Pharmacist
8. Pharmacy
9. Chemotherapy
10. Prescription
11. Pharmacopeia
12. Biologic products
13. Drug

_____m. Easily vaporized or evaporated

2. Match the historical events or persons on the right to the correct description.

_____a. Greek physician of the fifth century B.C. who is called the "Father of Medicine"

_____b. Discovered the x-ray in 1895

_____c. Discovered polio vaccines in 1955 and 1961 respectively

_____d. Published in London in 1618; included 1900 remedies; based largely on the works of Galen and the Arabian physicians

_____e. Advanced the science of medicine and pharmacy in the ninth and tenth centuries A.D.; compiled the first pharmacopeia

_____f. God of healing in Roman mythology

_____g. Founder of modern antiseptic surgery in London in the 1860s

_____h. The French Codex published in 1818

_____i. Used herbs and vile-tasting concoctions to drive out evil spirits

_____j. Set forth one of the earliest codes of sanitation

_____k. Developed preventive innoculations for rabies, chicken cholera, and anthrax (1822-1895)

_____l. Discovered radium in 1893

_____m. English physician who discovered the principle of smallpox vaccination in 1796

_____n. Egyptian scroll written about 1600 B.C. describing many prescriptions and medicinal formulas

_____o. Greek physician of the second century A.D. whose observations and writings influenced medicine for many centuries

1. Aesculapius
2. Ebers papyrus
3. Hindus
4. Moses
5. Primitive medicine man
6. Galen
7. Hippocrates
8. First American pharmacopeia
9. Arabians
10. Peruvians
11. Edward Jenner
12. Sir Alexander Fleming
13. Madame Curie
14. Banting and Best
15. First pharmacopeia in Britain
16. Wilhelm Roentgen
17. Louis Pasteur
18. First national pharmacopeia
19. Salk and Sabin
20. Lord Lister

______p. First used insulin in treating diabetes in Canada in 1922

______q. Published in 1820

______r. Used cinchona, which is similar to quinine, to treat malaria; used coca, from which cocaine is derived, to relieve pain

______s. Used Rauwolfia to calm the restless and treat heart disease

______t. Discovered penicillin by accident in 1929

3. List four purposes for which drugs are used and two examples of each.

a.

1)

2)

b.

1)

2)

c.

1)

2)

d.

1)

2)

4. List four sources of drugs and an example of each.

a.

b.

c.

d.

5. Describe the four names a drug may have.

   a.

   b.

   c.

   d.

6. Discuss standardization of drugs.

7. Name two official or legal standard books listing drugs.

   a.

   b.

8. Name three additional books which are sources of information about drugs.

a.

b.

c.

9. Match the laws or services on the right that aid in the control of drugs to the correct description.

_____a. Part of the Department of Health, Education, and Welfare; regulates the use of biologic products

_____b. Regulated the importation, manufacture, sale, and use of opium, cocaine, and all their compounds and derivatives (1914)

_____c. Listed eleven narcotic and habit-forming drugs; required labeling of any preparation containing these drugs; prohibited the making of false claims about medicines (1906)

_____d. Regulates the use of narcotics, amphetamines, amphetamine-like compounds, barbiturate and narcotic drugs, as well as those drugs which have no accepted medical use including heroin, marijuana, and LSD (1970)

_____e. Federal agency directly responsible to the president; has the power to suppress false or misleading advertising

_____f. Provided strict regulation of the manufacture, safety, effectiveness, sale, and use of drugs; amended several times (1938)

_____g. Enforces laws concerning food and drugs; receives and correlates reports from pharmaceutical firms and others concerning adverse effects of drugs

1. Controlled Substance Act
2. Public Health Service
3. Federal Food, Drug, and Cosmetic Act
4. Pure Food Act
5. Food and Drug Administration
6. Federal Trade Commission
7. Harrison Narcotic Act

22-A

10. Match the forms of drugs on the right to the correct description.

______a. Bulky suspension of drug preparations in a solvent, usually water

______b. Flat disc containing a drug and a sweetening agent, usually sugar

______c. Concentrated solid preparation of drugs made by dissolving a crude drug in a solvent, allowing the solution to evaporate, and forming the sediment into tablets or capsules

______d. Preparation of drugs suspended in an aqueous solution

______e. Palatable preparation of drugs dissolved in a mixture of alcohol, sugar, and an aromatic

______f. Medicinal preparation in fine particles

______g. Drug shaped in small balls or ovals; may be coated to disguise the taste

______h. Suspension of oily or fatty substances in water

______i. Concentrated liquid preparation made by dissolving a crude plant drug in an appropriate solvent

______j. Mixture of drugs with soap, oil, water, or alcohol to be used for external application only

______k. Drug prepared in sugar and water solution

______l. Mixture of drugs in a firm base such as glyceride or vegetable fat which melts at body temperature

______m. Dried, powdered drug pressed into a flat disc

______n. Volatile preparation of drugs dissolved in alcohol

______o. Liquid mixture with ingredients which tend to separate

1. Pill
2. Syrup
3. Spirit
4. Lozenge
5. Suppository
6. Capsule
7. Tablet
8. Elixir
9. Tincture
10. Suspension
11. Powder
12. Lotion
13. Fluidextract
14. Liniment
15. Ointment
16. Milk
17. Extract
18. Emulsion

_____p. Mixture of drugs in an oily base which spreads easily at body temperature

_____ q. Diluted alcoholic extract of drugs; strength varies, usually from ten to twenty percent

_____r. Small, cylindrical gelatin container filled with powder or granules

11. Use drug reference books.

(NOTE: If this has not been accomplished prior to the test, ask the instructor when the above activity should be completed.)

INTRODUCTION TO PHARMACOLOGY
UNIT I

ANSWERS TO TEST

1. a. 4
b. 8
c. 13
d. 7
e. 1
f. 10
g. 6
h. 2
i. 9
j. 11
k. 3
l. 12
m. 5

2. a. 7
b. 16
c. 19
d. 15
e. 9
f. 1
g. 20
h. 18
i. 5
j. 4
k. 17
l. 13
m. 11
n. 2
o. 6
p. 14
q. 8
r. 10
s. 3
t. 12

3. a. Diagnosis

Any two of the following:

1) Barium sulfate used in taking x-rays of the gastrointestinal tract

2) Dyes used to x-ray internal organs

3) Ferric chloride test for phenylketonuria

b. Treatment of symptoms

Any two of the following:

1) Analgesics to relieve pain

2) Antipyretics to decrease temperature

3) Local anesthetics to relieve or prevent pain

c. Treatment of diseases or dysfunctions

Any two of the following:

1) Antibiotics internally for specific infections

2) Topical ointments for dermatitis

3) Hormone therapy such as insulin for diabetes mellitus

d. Prevention of disease

Any two of the following:

1) Vaccines such as smallpox or polio

2) Serums such as gamma globulin

3) Antitoxins such as diphtheria or tetanus

4. a. Animal

Any one of the following:

1) Thyroid extract

2) Insulin

3) Adrenalin

4) Cortisone

b. Plant

Any one of the following:

1) Digitalis from purple foxglove

2) Castor oil from castor beans

3) Iodine from kelp or seaweed

4) Morphine or codeine from the white poppy

c. Mineral

Any one of the following:

1) Diluted hydrochloric acid

2) Epsom salts

3) Calcium

4) Sodium bicarbonate

d. Synthetic or chemical

Any one of the following:

1) Antibiotics--Streptomycin, penicillin
2) Sulfa drugs--Gantrisin, sulfadiazine
3) Synthetic steroids--Cortisone, prednisone
4) Hypoglycemics--Tolbutamide, chlorpropamide

5. Descriptions should include:

a. Generic

1) Given to the drug before it becomes official by the company that develops it
2) Processed by the American Medical Association Council on Drugs
3) First letter not capitalized
4) Universally used

b. Official

1) Used for a drug in one of the official publications
2) May or may not be the same as the generic name
3) First letter not capitalized

c. Chemical

1) Usually meaningful chiefly to the chemist
2) Exact chemical formula of the drug
3) First letter not capitalized

d. Trade

1) May be called trademark, brand, or proprietary name
2) Symbols TM or ® are used at the upper right of the name indicating it is registered and its use is restricted to the company which owns it
3) Deliberately made easier to pronounce, spell, and remember than the generic and chemical names
4) First letter capitalized

6. Discussion should include:

   a. Drug standards are essential to guarantee the strength and purity of medicines

   b. Purity and strength are determined by

      1) Physical examination for foreign or extraneous ingredients

      2) Chemical analysis

      3) Biological assay

      4) Clinical assay

   c. Standards of strength and purity are set by an association of physicians, pharmacists, and scientists

   d. Drug standards are enforced by the Food and Drug Administration

7. a. *United States Pharmacopeia (U.S.P.)*

   b. *National Formulary (N.F.)*

8. Any three of the following (or other books which are currently being used in your institution):

   a. *United States Dispensatory and Physicians' Pharmacology*

   b. *American Hospital Formulary Service*

   c. *Current Drug Handbook*

   d. *Drugs in Current Use and New Drugs*

   e. *Physician's Desk Reference (PDR)*

9. a. 2
   b. 7
   c. 4
   d. 1
   e. 6
   f. 3
   g. 5

10. a. 16
    b. 4
    c. 17
    d. 12
    e. 8
    f. 11
    g. 1
    h. 18
    i. 13
    j. 14
    k. 2
    l. 5
    m. 7
    n. 3
    o. 10
    p. 15
    q. 9
    r. 6

11. Evaluated to the satisfaction of the instructor.

RESPONSIBILITY OF THE PRACTICAL NURSE IN THE ADMINISTRATION OF MEDICATION
UNIT II

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to discuss the responsibility of the practical nurse in the care, control, and administration of medication. This knowledge will be evidenced by demonstration throughout the program and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Discuss the accountability of a practical nurse in the administration of medication.
2. Discuss the control of narcotics and other medications.
3. List ten ethical responsibilities of the practical nurse in the administration of medication.
4. Discuss self-prescribed medication.
5. Discuss administration of medication for infants and young children.
6. Discuss medications for children.
7. Discuss medications for adolescents.
8. Discuss administration of medication for the geriatric patient.
9. Determine which medications and injections are given by practical and professional nurses.
10. Determine the responsibilities of a practical nurse according to narcotic control laws.

RESPONSIBILITY OF THE PRACTICAL NURSE IN THE ADMINISTRATION OF MEDICATION

UNIT II

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information and assignment sheets.

  C. Discuss terminal and specific objectives.

  D. Discuss information and assignment sheets.

  E. Provide references concerning current narcotic control laws.

  F. Assist with assignment sheets.

  G. Arrange for an orientation to the institutional facilities with particular attention to medication administration procedures and policies.

  H. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Complete assignment sheets.

  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Assignment sheets

    1. Assignment Sheet #1--Institutional Policies

    2. Assignment Sheet #2--Narcotic Control

- D. Test
- E. Answers to test

II. References:

- A. Falconer, Mary W. et al. *The Drug, The Nurse, The Patient.* Philadelphia, Pennsylvania: W.B. Saunders Company, 1974.
- B. Skelley, Esther G. *Medications and Mathematics for the Nurse.* Albany, New York: Delmar Publishers, 1972.
- C. *Lesson Plans Pharmacology.* Nashville, Tennessee: Tennessee State Board for Vocational Education, 1970.

III. Films:

- A. "Drug Addiction." Oklahoma State Department of Health.
- B. "Narcotics: Pit of Despair." Oklahoma State Department of Health.
- C. "Treatment of Acute Drug Overdose." Eli Lilly Company.
- D. "Marijuana." Oklahoma State Department of Health.

RESPONSIBILITY OF THE PRACTICAL NURSE IN THE ADMINISTRATION OF MEDICATION

UNIT II

INFORMATION SHEET

I. Accountability

A. Institutional policies vary in the degree of responsibility a practical nurse is allowed or required to assume

(NOTE: In some hospitals, practical nurses may not be permitted to give any medications. In others, the practical nurse may be allowed to give only oral medications. In some hospitals, nursing homes, patients' homes, and doctors' offices, practical nurses may be permitted to give all medications, including parenteral injections.)

B. A practical nurse should not administer medications until he/she has had adequate training

C. Venipunctures, techniques of I.V. additives, or removal of an intracath are procedures not usually taught in practical nursing schools; these techniques may be taught through in-service education after the graduate has demonstrated competency

D. A nurse is responsible for his/her own actions and can be held liable for negligent actions or omissions; thus, a nurse may be considered negligent if he/she gives a patient incorrect medication or fails to give a medication

E. When a nurse believes that a medication order is incorrect, it is his/her responsibility to bring the order to the attention of the person in charge and/or the physician before giving the medication; the action should be documented

F. A nurse is responsible for his/her actions by carrying out the order of a physician; if a nurse knowingly carries out a questionable order, he/she is liable

G. A nurse must not change any part of a doctor's order without his expressed consent; in the event he does not change an order the nurse feels is questionable, he/she has the right to refuse to administer the medication

H. When a nurse undertakes to perform tasks beyond the scope of his/her professional training, he/she is guilty of malpractice

INFORMATION SHEET

II. Control of narcotics and other medications

A. According to the Harrison Narcotic Act and the Narcotic Control Act, certain drugs and medications must be strictly and accurately accounted for

B. According to these laws, a practical nurse is permitted to give narcotics under the direction and supervision of a licensed physician or dentist; otherwise, it is unlawful for him/her to have narcotic drugs in his/her possession

C. Records are kept noting the patient's name, date and time of administration, name of the drug and amount given, and the doctor's name and registry number

D. Careful, accurate records of narcotics must be kept by the nurse who gives the narcotic, including the narcotic record and the necessary notes on the patient's record

E. Institutional policies concerning such records vary and it is the responsibility of the individual nurse to learn the policies and procedures of the particular institution

III. Ethical responsibilities

A. A nurse must not suggest or prescribe medications

B. A nurse must not undermine the patient's faith in his doctor by commenting unfavorably about his orders; suggestions for change of therapy may be made to the team leader or in a team conference

C. A nurse is responsible for knowing the principal effect, adverse reactions, and compatibilities of medications being given; any unfavorable reaction must be reported and recorded promptly

D. The nurse has a responsibility to the patient, the institution, and the physician to give and record the right medication at the prescribed time and to be aware of the patient's reaction to the medication

E. The nurse has a legal and ethical responsibility to report and record any incorrect medication immediately so that appropriate action can be taken

F. The nurse's record about medication must be accurate and must contain all pertinent information

INFORMATION SHEET

G. Disposable syringes and needles should be used and discarded in a safe manner

H. Unused medications should be returned to the pharmacy or discarded so that salvage for reuse is impossible

I. All medications are charted AFTER administration

J. It is the responsibility of each nurse to know and follow the institutional policies concerning medications

K. After administering medications, all equipment used should be properly cleaned and stored to be ready for use by the next person

L. Patients are not permitted to keep medications at their bedside unless so ordered by the physician

M. A nurse must not take medicine which belongs to a patient or the hospital, either for her own use or to give to another

IV. Self-prescribed medication

A. The nurse has a serious responsibility to discourage self-prescribed medication

B. Over-the counter medications, while considered harmless, may cause allergic or toxic reactions

Example: Overdosages of vitamin D can cause serious chemical imbalances

C. Self-prescribed medications may afford temporary relief of symptoms which delays the person from seeking needed medical advice

D. Old or unused portions of medications in the home should be discarded in a safe manner

E. Habituation and addiction may result from self-prescribed medication

F. All medication should be safely stored out of the reach of children or other persons not responsible for their behavior

V. Medications for infants and young children

A. Oral administration

1. Should be in liquid form

2. May be mixed with small amount of formula, water, or food

INFORMATION SHEET

B. Parenteral administration

1. In small infants use vastus lateralis site; in larger infants and young children, gluteus medius site may be used also

2. One nurse alone may be able to administer an injection to a small infant; two are preferable for an older infant

VI. Medications for children

A. Oral administration

1. Should be liquid or chewable type

2. Tablet or capsule may be mixed with small amounts of food

(NOTE: The child should not be tricked into taking medicine in food when he is old enough to understand that he is taking medication. His willingness to take medication is influenced by the nurse's attitude.)

B. Parenteral administration

1. Should be administered quickly and efficiently

2. If necessary, a helper should hold the child to avoid any sudden movements

C. Praising a child may help to lessen later resistance to medication

VII. Medications for adolescents

A. Dosage is equal to or slightly less than that of an adult

B. Usually the adolescent will cooperate if he is treated as an adult

VIII. Medications for the geriatric patient

A. Dosage may be somewhat less than that for the young or middle-aged adult

B. Adverse reactions to medications occur more frequently in this age group; therefore, closer observation is necessary

C. Geriatric patients may have difficulty swallowing tablets or capsules; check carefully to see that medication has been swallowed

D. Sedatives or tranquilizers may be administered more often and in smaller doses

INFORMATION SHEET

E. Laxatives may be given more often and, unless contraindicated, should be accompanied with increased fluid intake

F. Dietary supplements such as vitamin-mineral preparations may be needed since diet of the elderly is frequently deficient

G. Treatment may include a "tonic" or some simple drug to make the patient feel better; the nurse can help the patient by not showing doubt concerning the effectiveness of such medication

RESPONSIBILITY OF THE PRACTICAL NURSE IN THE ADMINISTRATION OF MEDICATION
UNIT II

ASSIGNMENT SHEET #1--INSTITUTIONAL POLICIES

Determine which medications are given by the practical nurse and which are given by the professional nurse. If the students in your class are employed in more than one facility, compare institutional policies. Write a brief report of your findings.

RESPONSIBILITY OF THE PRACTICAL NURSE IN THE ADMINISTRATION OF MEDICATION
UNIT II

ASSIGNMENT SHEET #2--NARCOTIC CONTROL

From a reference, determine and write a brief report concerning the responsibilities of a practical nurse according to narcotic control laws. List some examples of drugs whose uses are regulated by the narcotic control laws.

RESPONSIBILITY OF THE PRACTICAL NURSE IN THE ADMINISTRATION OF MEDICATION
UNIT II

TEST

1. Discuss the accountability of a practical nurse in the administration of medication.

2. Discuss the control of narcotics and other medications.

3. List ten ethical responsibilities of the practical nurse in the administration of medication.

a.

b.

c.

d.

e.

f.

g.

h.

i.

j.

4. Discuss self-prescribed medication.

5. Discuss administration of medication for infants and young children.

6. Discuss medications for children.

7. Discuss medications for adolescents.

8. Discuss administration of medication for the geriatric patient.

9. Determine which medications and injections are given by practical and professional nurses.

10. Determine the responsibilities of a practical nurse according to narcotic control laws.

(NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

RESPONSIBILITY OF THE PRACTICAL NURSE IN THE ADMINISTRATION OF MEDICATION
UNIT II

ANSWERS TO TEST

1. Discussion should include:

   a. Institutional policies vary in the degree of responsibility a practical nurse is allowed or required to assume

   b. A practical nurse should not administer medications until he/she has had adequate training

   c. Venipunctures, techniques of I.V. additives, or removal of an intracath are procedures not usually taught in practical nursing schools; these techniques may be taught through in-service education after the graduate has demonstrated competency

   d. A nurse is responsible for his/her own actions and can be held liable for negligent actions or omissions; thus, a nurse may be considered negligent if he/she gives a patient incorrect medication or fails to give a medication

   e. When a nurse believes that a medication order is incorrect, it is his/her responsibility to bring the order to the attention of the person in charge and/or the physician before giving the medication; the action should be documented

   f. A nurse is responsible for his/her actions by carrying out the order of a physician; if a nurse knowingly carries out a questionable order, he/she is liable

   g. A nurse must not change any part of a doctor's order without his expressed consent; in the event he does not change an order the nurse feels is questionable, he/she has the right to refuse to administer the medication

   h. When a nurse undertakes to perform tasks beyond the scope of his/her professional training, he/she is guilty of malpractice

2. Discussion should include:

   a. According to the Harrison Narcotic Act and the Narcotic Control Act, certain drugs and medications must be strictly and accurately accounted for

b. According to these laws, a practical nurse is permitted to give narcotics under the direction and supervision of a licensed physician or dentist; otherwise, it is unlawful for him/her to have narcotic drugs in his/her possession

c. Records are kept noting the patient's name, date and time of administration, name of the drug and amount given, and the doctor's name and registry number

d. Careful accurate records must be kept by the nurse who gives the narcotic, including the narcotic record and the necessary notes on the patient's record

e. Institutional policies concerning such records vary and it is the responsibility of the individual nurse to learn the policies and procedures of the particular institution

3. Any ten of the following:

a. A nurse must not suggest or prescribe medications

b. A nurse must not undermine the patient's faith in his doctor by commenting unfavorably about his orders; suggestions for change of therapy may be made to the team leader or in a team conference

c. A nurse is responsible for knowing the principal effect, adverse reactions, and compatibilities of medications being given; any unfavorable reaction must be reported and recorded promptly

d. The nurse has a responsibility to the patient, the institution, and the physician to give and record the right medication at the prescribed time and to be aware of the patient's reaction to the medication

e. The nurse has a legal and ethical responsibility to report and record any incorrect medication immediately so that appropriate action can be taken

f. The nurse's record about medications must be accurate and must contain all pertinent information

g. Disposable syringes and needles should be used and discarded in a safe manner

h. Unused medications should be returned to the pharmacy or discarded so that salvage for reuse is impossible

i. All medications are charted AFTER administration

j. It is the responsibility of each nurse to know and follow the institutional policies concerning medications

k. After administering medications, all equipment used should be properly cleaned and stored to be ready for use by the next person

- l. Patients are not permitted to keep medications at their bedside unless so ordered by the physician
- m. A nurse must not take medicine which belongs to a patient or the hospital, either for her own use or to give to another

4. Discussion should include:
   - a. The nurse has a serious responsibility to discourage self-prescribed medication
   - b. Over-the-counter medications, while considered harmless, may cause allergic or toxic reactions
   - c. Self-prescribed medications may afford temporary relief of symptoms which delays the person from seeking needed medical advice
   - d. Old or unused portions of medications in the home should be discarded in a safe manner
   - e. Habituation and addiction may result from self-prescribed medication
   - f. All medication should be safely stored out of the reach of children or other persons not responsible for their behavior

5. Discussion should include:
   - a. Oral administration
     - 1) Should be in liquid form
     - 2) May be mixed with small amount of formula, water, or food
   - b. Parenteral administration
     - 1) In small infants use vastus lateralis site; in larger infants and young children, gluteus medius site may be used also
     - 2) One nurse alone may be able to administer an injection to a small infant; two are preferable for an older infant

6. Discussion should include:
   - a. Oral administration
     - 1) Should be liquid or chewable type
     - 2) Tablet or capsule may be mixed with small amounts of food
   - b. Parenteral administration
     - 1) Should be administered quickly and efficiently
     - 2) If necessary, a helper should hold the child to avoid any sudden movements
   - c. Praising a child may help to lessen later resistance to medication

7. Discussion should include:
   a. Dosage is equal to or slightly less than that of an adult
   b. Usually the adolescent will cooperate if he is treated as an adult
8. Discussion should include:
   a. Dosage may be somewhat less than that for the young or middle-aged adult
   b. Adverse reactions to medications occur more frequently in this age group; therefore, closer observation is necessary
   c. Geriatric patients may have difficulty swallowing tablets or capsules; check carefully to see that medication has been swallowed
   d. Sedatives or tranquilizers may be administered more often and in smaller doses
   e. Laxatives may be given more often and, unless contraindicated, should be accompanied with increased fluid intake
   f. Dietary supplements such as vitamin-mineral preparations may be needed since diet of the elderly is frequently deficient
   g. Treatment may include a "tonic" or some simple drug to make the patient feel better; the nurse can help the patient by not showing doubt concerning the effectiveness of such medication
9. Evaluated to the satisfaction of the instructor.
10. Evaluated to the satisfaction of the instructor.

WEIGHTS, MEASURES, AND ABBREVIATIONS
UNIT III

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to match terms to definitions and write values for the prefixes used in the metric system. The student should be able to write various symbols and measurements used in the three systems of measurements and the meanings of abbreviations pertaining to the administration of medications. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to

1. Match terms associated with this unit to the correct definitions.
2. Discuss the systems of measurement.
3. Write values for the prefixes used in the metric system.
4. Write the symbols for units of measurement in the metric system.
5. Write the equivalent measurements for units of dry weight in the metric system.
6. Write the equivalent measurements for units of liquid volume in the metric system.
7. Write the symbols for units of measurement in the apothecaries' system.
8. Write the equivalent measurements for units of dry weight in the apothecaries' system.
9. Write the equivalent measurements for units of liquid volume in the apothecaries' system.
10. Write the symbols for units of household measurement.
11. Write the equivalent measurements for units of household measurement.
12. Write equivalent measurements of weight.
13. Write equivalent measures of volume.
14. Write the meanings of abbreviations pertaining to the administration of medicine.

WEIGHTS, MEASURES, AND ABBREVIATIONS
UNIT III

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information and assignment sheets.

  C. Make transparencies.

  D. Discuss terminal and specific objectives.

  E. Discuss information and assignment sheets.

  F. Prepare 5 x 8 flash cards showing abbreviations.

  G. Choose two teams of students to compete in a contest to recognize abbreviations from the flash cards.

  H. Assemble various measuring devices: teaspoons, tablespoons, medicine cups, medicine droppers, syringes, graduates, or others which are available or are used in the institution.

  I. Assist with assignment sheets as needed.

  J. Select abbreviations over which the students will be tested.

  K. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Compete in a contest to recognize abbreviations from flash cards.

  E. Compare various measuring devices.

  F. Complete assignment sheets.

  G. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Transparency masters

    1. TM 1--Metric Units

    2. TM 2--Apothecaries' Units

    3. TM 3--Household, Apothecaries', and Metric Units

    4. TM 4--Household, Apothecaries', and Metric Units (Continued)

    5. TM 5--Household, Apothecaries', and Metric Units (Continued)

    6. TM 6--Household, Apothecaries', and Metric Units (Continued)

  D. Assignment sheets

    1. Assignment Sheet #1--Household and Apothecaries' Systems

    2. Assignment Sheet #2--Metric System

  E. Answers to assignment sheets

  F. Test

  G. Answers to test

II. References:

  A. Asperheim, Mary K. *Pharmacology for Practical Nurses.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1967.

  B. Squire, Jessie E. and Jean M. Welch. *Basic Pharmacology for Nurses.* St. Louis, Missouri: The C. V. Mosby Company, 1973.

III. Filmstrips:

  A. "The Metric System." Trainex Corporation.

  B. "Apothecary Measurements." Trainex Corporation.

  C. "Household Measurements." Trainex Corporation.

WEIGHTS, MEASURES, AND ABBREVIATIONS
UNIT III

INFORMATION SHEET

I. Terms and definitions

   A. Apothecary--Person who compounds and dispenses drugs

      (NOTE: This term has been replaced by the term *druggist* or *pharmacist*. In Great Britain it denotes a practitioner who has passed the examinations of a surgeon and an apothecary.)

   B. Meter--Unit of linear measurement in the metric system

   C. Gram--Unit of weight in the metric system; weight of one cubic centimeter of water at 4° centigrade

   D. Liter--Unit of fluid measure; volume occupied by one kilogram of water at 4° centigrade; equals approximately one quart

   E. Grain--Unit of weight in the apothecaries' system; determined by the average weight of a grain of wheat

   F. Milliequivalent--Weight of a substance contained in one milliliter (1 cc) of a normal solution

   G. Enteric coated--Tablets which are covered with a substance that does not dissolve until reaching the intestine

   H. Hypodermic or subcutaneous--Beneath the skin

   I. Intramuscular--Within a muscle

      (NOTE: The prefix *intra* means within.)

   J. Intravenous--Within a vein

   K. Intradermal--Within the skin

II. Systems of measurement

   A. Equivalent measurements are approximate

      1. One milliliter actually equals 1.000028 cubic centimeters; one teaspoon equals 4 to 5 ml

      2. Pharmacists consider an error of 10% in changing from one system to another as negligible; this safe margin of error is already considered in the markings of a medicine glass

INFORMATION SHEET

B. Apothecaries'

1. Devised by the Greeks and the Romans in ancient times

2. Based measurements on weights and volumes of articles in everyday use, such as a grain of wheat, a coin or small stone, or a container of liquid

3. Used commonly by British and Americans

4. Uses symbols or abbreviations and Roman numerals for written measurements of medications

Examples: One and one-half drams is written ʒ $\overline{\text{iss}}$

Twenty grains is written gr$\overline{\text{xx}}$ or gr 20

Three ounces is written ℥ $\overline{\text{iii}}$

C. Metric

1. Invented by the French in late eighteenth century

2. Based on the decimal system, using units and multiples of ten

3. Uses abbreviations and Arabic numerals for written measurements of medications

Examples: Ten grams is written 10 Gm

One thousand milliliters or cubic centimeters is written 1000 ml or cc

D. Household

1. Uses common household utensils when medications are given at home

Examples: Teaspoons, tablespoons, or household measuring cups are used to measure medications

2. Should be used only when other measurements are not readily available because it is approximate

INFORMATION SHEET

III. Prefixes in metric system

A.	Micro--One-millionth	0.000001
B.	Milli--One-thousandth	0.001
C.	Centi--One-hundredth	0.01
D.	Deci--One-tenth	0.1
E.	Unit--One	1.0
F.	Deka or deca--Ten	10.0
G.	Hecto--One hundred	100.0
H.	Kilo--One thousand	1000.0

IV. Units and symbols of the metric system

A. Gram--Gm

B. Cubic centimeter--cc

C. Liter--L

D. Milligram--mg

E. Microgram--mcg

F. Kilogram--kg

V. Metric table of dry weight (Transparency 1)

A. 1,000 milligrams = 1 gram

B. 1,000 grams = 1 kilogram

VI. Metric table of liquid volume

A. 1,000 milliliters (ml) = 1 liter

B. 1,000 cubic centimeters (cc) = 1 liter

VII. Units and symbols of the apothecaries' system

A. Grain--gr

B. Dram--dr or ʒ

C. Ounce--oz or ℥

INFORMATION SHEET

- D. Pound--pd or lb
- E. Minim--m
- F. Pint--pt
- G. Quart--qt
- H. Gallon--gal

VIII. Apothecaries' table of dry weight (Transparency 2)

- A. 60 grains = 1 dr or ʒ
- B. 8 drams = 1 oz or ℥
- C. 12 ounces = 1 pound, pd, or lb

IX. Apothecaries' table of liquid volume (Transparency 2)

- A. 60 minims = 1 fluidram
- B. 8 drams = 1 fluid ounce
- C. 16 ounces = 1 pint
- D. 2 pints = 1 quart
- E. 4 quarts = 1 gallon

X. Units and symbols of household measurement

- A. Drop--gtt
- B. Teaspoon--t or tsp
- C. Tablespoon--T or tbsp
- D Measuring cup--c

XI. Household table of measurements

- A. 60 drops (gtt) = 1 teaspoon (tsp)
- B. 4 teaspoons = 1 tablespoon
- C. 2 tablespoons = 1 ounce
- D. 6 ounces = 1 teacupful

INFORMATION SHEET

E. 8 ounces = 1 glassful = 1 measuring cup = 16 tablespoons (tbsp)

F. 16 ounces = 2 measuring cups = 1 pint

G. 32 ounces = 4 measuring cups = 1 quart

XII. Equivalent measures of weight

(NOTE: A measure of weight, such as a gram or a pound, indicates how heavy an item is. It is used for solid or dry measure.)

Metric	Apothecaries'	Household
0.1 Gm	1 1/2 gr	---
1 Gm	15 gr	1/4 tsp
4 Gm	1 dr	1 tsp
30 Gm	1 oz	8 tsp
60 mg	1 gr	---
15 mg	1/4 gr	---
10 mg	1/6 gr	---
0.4 mg	1/150 gr	---
1.0 kg	---	2.2 lb

XIII. Equivalent measures of volume (Transparencies 3, 4, 5, and 6)

(NOTE: A measure of volume, such as a cubic centimeter or a pint, indicates how much space an item occupies. It is used for liquid measure.)

Metric	Apothecaries'	Household
1 cc	15 m	15 gtts
4 cc	60 m/1 dr	60 gtts/1 tsp
15 cc	1/2 oz	4 tsp/1 tbsp/½ oz
30 cc	8 dr/1 oz	8 tsp/2 tbsp
240 to 250 cc	8 oz	1 glassful
500 cc	1 pt	2 measuring cups
1000 cc/1 L	1 qt	4 measuring cups

INFORMATION SHEET

(NOTE: When it is necessary to convert less commonly used dosages, it is suggested that the nurse consult a table of approximate equivalents similar to the one below.)

Table of approximate equivalents: metric and apothecaries' systems

Liquid	*Weight*		
	gr	*mg*	*Gm*
1 fl. oz. = 30 ml	30 =	2000	= 2
$\frac{1}{2}$ fl. oz. = 15 ml	15 =	1000	= 1
$2\frac{1}{2}$ fluidrams = 10 ml	12 =	750	= 0.75
2 fluidrams = 8 ml	10 =	600	= 0.6
$1\frac{1}{4}$ fluidrams = 5 ml	$7\frac{1}{2}$ =	500	= 0.5
1 fluidram = 4 ml	5 =	300	= 0.3
45 minims = 3 ml	4 =	250	= 0.25
30 minims = 2 ml	3 =	200	= 0.2
15 minims = 1 ml	2 =	120	= 0.12
12 minims = 0.75 ml	$1\frac{1}{2}$ =	100	= 0.1
10 minims = 0.6 ml	1 =	60	= 0.06
8 minims = 0.5 ml	$\frac{3}{4}$ =	50	= 0.05
5 minims = 0.3 ml	$\frac{1}{2}$ =	30	= 0.03
4 minims = 0.25 ml	$\frac{1}{3}$ =	20	= 0.02
3 minims = 0.2 ml	$\frac{1}{4}$ =	15	= 0.015
$1\frac{1}{2}$ minims = 0.1 ml	$\frac{1}{6}$ =	10	= 0.010
1 minim = 0.06 ml	$\frac{1}{8}$ =	8	= 0.008
$\frac{3}{4}$ minim = 0.05 ml	$\frac{1}{10}$ =	6	= 0.006
$\frac{1}{2}$ minim = 0.03 ml	$\frac{1}{16}$ =	4	= 0.004
	$\frac{1}{20}$ =	3	= 0.003
	$\frac{1}{40}$ =	1.5	= 0.0015
	$\frac{1}{60}$ =	1	= 0.0010
	$\frac{1}{100}$ =	0.6	= 0.0006
	$\frac{1}{120}$ =	0.5	= 0.0005
	$\frac{1}{150}$ =	0.4	= 0.0004
	$\frac{1}{200}$ =	0.3	= 0.0003
	$\frac{1}{500}$ =	0.12	= 0.00012
	$\frac{1}{1000}$ =	0.06	= 0.00006

INFORMATION SHEET

XIV. Abbreviations pertaining to administration of medications

Abbreviation	Meaning
āā	of each
ac	before meals
ad	to
ad lib	as desired
amp	ampule
aq	water
aq dist	distilled water
bid	twice a day
bin	twice a night
cap	capsule
c	with
cc	cubic centimeter
comp	compound
DC	discontinue
dr, ʒ	dram
elix	elixir
EC	enteric coated
ext	extract
Fe	iron
fld	fluid
Gm	gram
gr	grain
gtt	drop
H, hypo	hypodermic

62-A

INFORMATION SHEET

Abbreviation	Meaning
h	hour
hs	hours of sleep, bedtime
IM	intramuscular
IV	intravenous
L	liter
liq	liquid
m	minim
mg	milligram
mEq	milliequivalent
noc, n	night
non rep	do not repeat
ol	oil
O D	right eye
O U	each eye
O S	left eye
om	every hour
o n	every night
os	mouth
oz, ℥	ounce
pc	after meals
per	through, by
p o, per os	by mouth
pil	pill
pre-op	preoperative
prn	when necessary

INFORMATION SHEET

Abbreviation	Meaning
pulv	powder
q	every
q d	every day
q h	every hour
qid	four times a day
qod	every other day
q s	quantity sufficient
Rx	take
s̄	without
sol	solution
sp	spirit
ss	one-half
stat	at once
syr	syrup
tab	tablet
tid	three times a day
tin	three times a night
tr, tinc	tincture
u, U	unit
ung	ointment
vin	wine

Metric Units

DRY WEIGHT ..

- Kilogram
- Milligram
- Gram

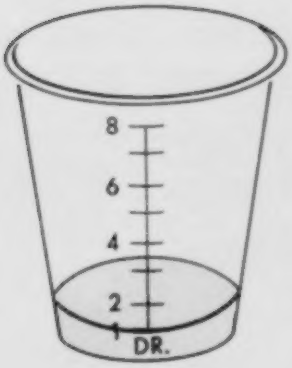
LIQUID VOLUME ..

- Liter
- Milliliter

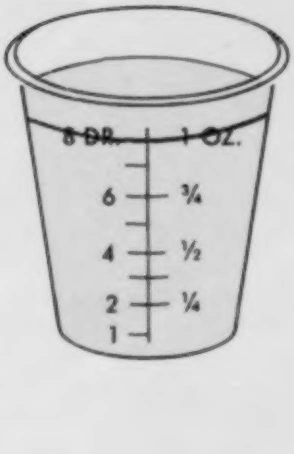
Apothecaries' Units

Liquid	Dry
60 Minims = 1 Fluidram	60 Grains = 1 Dram

One Dram



One Ounce


8 DR.
1 OZ.
6
¾
4
½
2
¼
1

Household, Apothecaries', and Metric Units

1 Tsp = ʒi̇ =

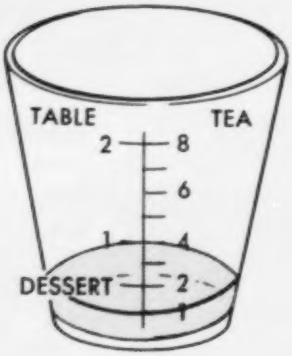
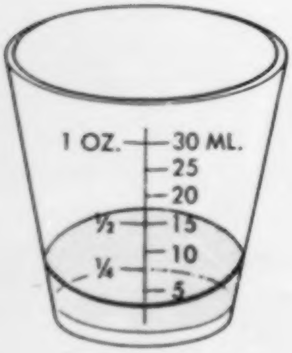
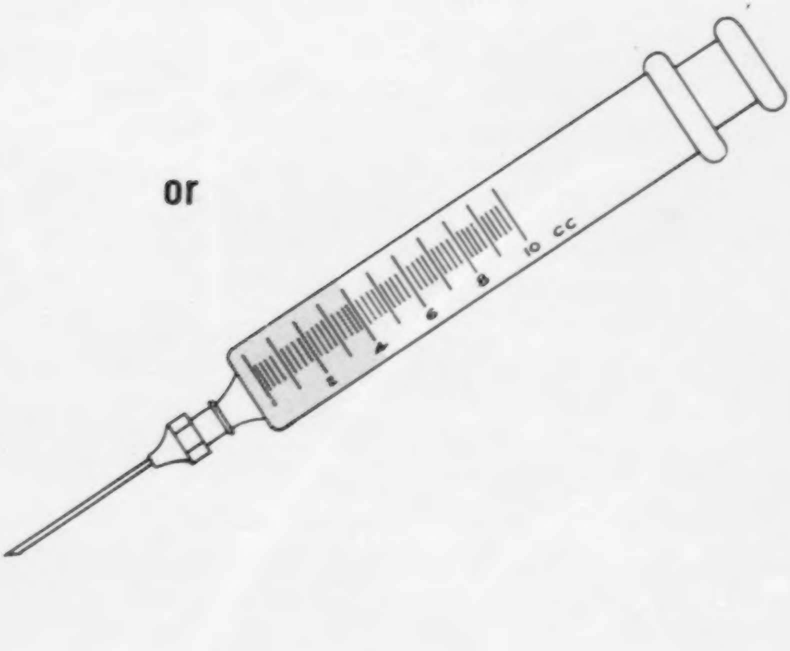


TABLE
TEA
2
8
6
1
4
DESSERT
2
1

4 ML


1 OZ.
30 ML.
25
20
½
15
10
¼
5

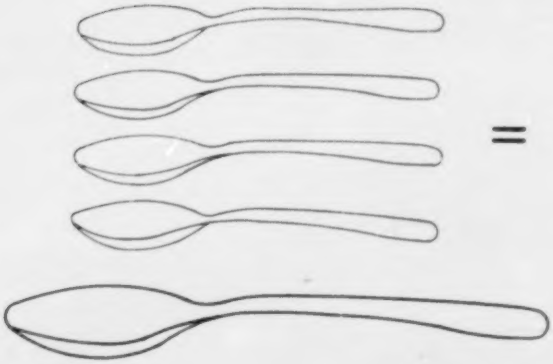
or



Household, Apothecaries', and Metric Units

(Continued)

4 Tsp or 1 Tbsp

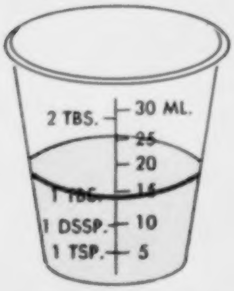


=

ʒ $\overline{\text{iv}}$

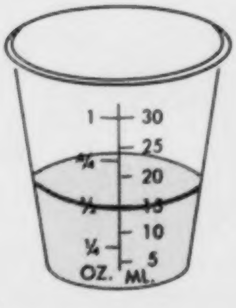
or

℥ $\overline{\text{ss}}$


2 TBS.
30 ML.
25
20
1 TBS.
15
1 DSSP.
10
1 TSP.
5

15 ML

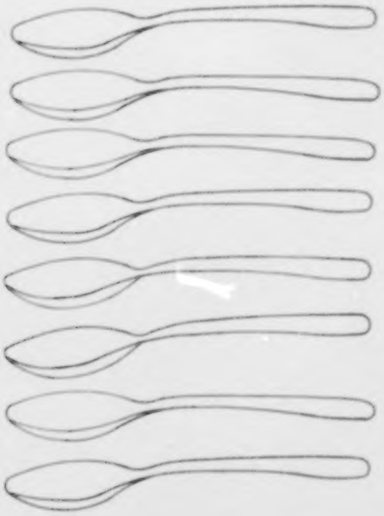
=


1
30
25
¾
20
½
15
10
¼
5
OZ.
ML.

Household, Apothecaries', and Metric Units

(Continued)

8 Tsp or 2 Tbsp

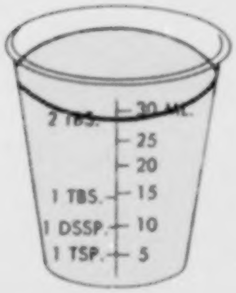


=

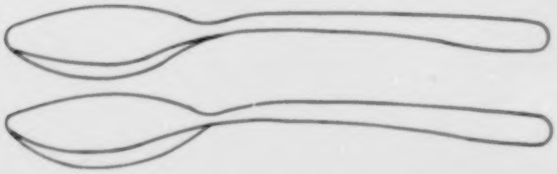
ʒ viii

or

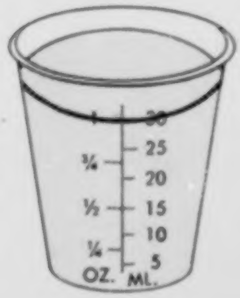
℥ i


2 TBS.
30 ML.
25
20
1 TBS.
15
1 DSSP.
10
1 TSP.
5

30 ML



=

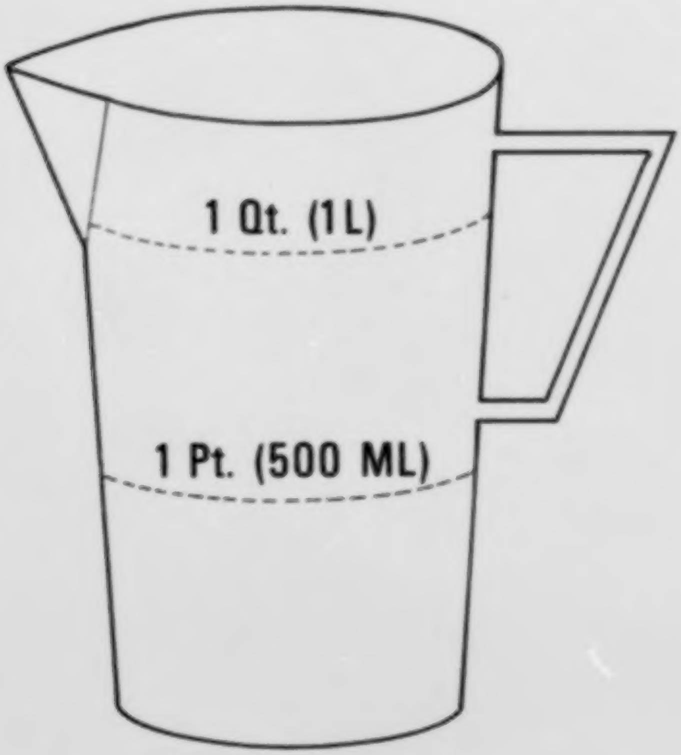

1
30
¾
25
20
½
15
10
¼
5
OZ.
ML.

Household, Apothecaries', and Metric Units

(Continued)

1 Quart =
32 Ounces =
1 Liter (1000 ML)

1/2 Quart =
15-16 Ounces =
500 ML


1 Qt. (1 L)
1 Pt. (500 ML)

WEIGHTS, MEASURES, AND ABBREVIATIONS
UNIT III

ASSIGNMENT SHEET #1--HOUSEHOLD AND APOTHECARIES' SYSTEMS

1. Complete the following:

(NOTE: Begin each list with the smallest and end with the largest unit.)

a. The units of dry measure used in the apothecaries' system are:

1) ____________

2) ____________

3) ____________

4) ____________

b. The units of liquid or volume measure used in the apothecaries' system are:

1) ____________

2) ____________

3) ____________

4) ____________

5) ____________

6) ____________

c. The units of measure in the household system are:

1) ____________

2) ____________

3) ____________

4) ____________

5) ____________

6) ____________

or ____________

7) ____________

8) ____________

ASSIGNMENT SHEET #1

2. Write symbols for the following:
   - a. Minims one __________
   - b. A grain __________
   - c. Three drops __________
   - d. One-tenth of a grain ________
   - e. One-fourth of a grain ________
   - f. One dram __________
   - g. Six drams __________
   - h. One-half ounce ____
   - i. One ounce __________
   - j. Fifteen minims _____

3. State the apothecaries' equivalents of the following amounts:
   - a. One minim of water = __________ drops
   - b. One dram = __________ ounces
   - c. One ounce = __________ drams
   - d. Four drams = __________ ounces
   - e. Six drams = __________ ounces
   - f. One-half ounce = __________ drams

4. State the equivalents for the following:
   - a. One dram = __________ teaspoons
   - b. One ounce = __________ tablespoons
   - c. One-half ounce = __________ tablespoons/ _____ teaspoons
   - d. One teaspoon = __________ drams
   - e. One tablespoon = __________ drams
   - f. One tablespoon = __________ ounces
   - g. One cup = __________ tablespoons
   - h. One cup = __________ ounces
   - i. One pint = __________ ounces
   - j. Thirty-two ounces = __________ pints/ __________ quarts

WEIGHTS, MEASURES, AND ABBREVIATIONS
UNIT III

ASSIGNMENT SHEET #2--METRIC SYSTEM

1. The units of liquid measure in the metric system are the __________ and __________.

2. The units of dry measure in the metric system are the __________ and __________.

3. The physician has ordered drugs in grams, but you find the label expresses the amount in milligrams. Show the equivalent for each of the following:

   a. One gram = ______ mg

   b. 0.9 gram = ______ mg

   c. 0.8 gram = ______ mg

   d. 0.75 gram = ______ mg

   e. 0.5 gram = ______ mg

   f. 0.1 gram = ______ mg

   g. 100 mg = ______ Gm

   h. 250 mg = ______ Gm

   i. 500 mg = ______ Gm

   j. 750 mg = ______ Gm

   k. 1000 mg = ______ Gm

4. Express the following amounts in equivalent metric units.

   a. Fifteen minims = ______ ml

   b. One dram = ______ ml

   c. Four drams = ______ ml

   d. One ounce = ______ ml

   e. Fifteen grains = ______Gm

   f. One grain = ______ mg

   g. One tsp = ______ ml

   h. One tbsp = ______ ml

   i. Two tbsp = ______ ml

   j. One cup = ______ ml

   k. One pint = ______ ml

   l. One quart = ______ ml

WEIGHTS, MEASURES, AND ABBREVIATIONS
UNIT III

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

1. a. 1) Grain
      2) Dram
      3) Ounce
      4) Pound
   b. 1) Minim
      2) Dram or fluidram
      3) Ounce
      4) Pint
      5) Quart
      6) Gallon
   c. 1) Drop
      2) Teaspoon
      3) Tablespoon
      4) Ounce
      5) Teacupful
      6) Glassful or measuring cup
      7) Pint
      8) Quart
2. a. m $\dot{\overline{\text{i}}}$
   b. gr $\dot{\overline{\text{i}}}$
   c. gtts $\overset{\cdot\,\cdot\,\cdot}{\overline{\text{iii}}}$
   d. gr $\frac{1}{10}$
   e. gr $\frac{1}{4}$
   f. ʒ $\dot{\overline{\text{i}}}$
   g. ʒ $\overset{\cdot\,\cdot}{\overline{\text{vi}}}$
   h. ℥ $\overset{\cdot\,\cdot}{\overline{\text{ss}}}$
   i. ℥ $\dot{\overline{\text{i}}}$
   j. m xv

3. a. One
b. One-eighth
c. Eight
d. One-half
e. Three-fourths
f. Four

4. a. One
b. Two
c. One, four
d. One
e. Four
f. One-half
g. Sixteen
h. Eight
i. Sixteen
j. Two, one

Answers to Assignment Sheet #2

1. Milliliter or cubic centimeter and liter
2. Gram, kilogram
3. a. 1000
b. 900
c. 800
d. 750
e. 500
f. 100
g. 0.1
h. 0.25
i. 0.5
j. 0.75
k. 1.0

4. a. One
b. Four
c. Fifteen
d. Thirty
e. One
f. Sixty
g. Four
h. Fifteen
i. Thirty
j. Two-hundred fifty
k. Five hundred
l. One thousand

WEIGHTS, MEASURES, AND ABBREVIATIONS
UNIT III

TEST

1. Match the terms on the right to the correct definition.

______a. Unit of fluid measure; volume occupied by one kilogram of water at 4° centigrade; equals approximately one quart

______b. Within the skin

______c. Person who compounds and dispenses drugs

______d. Unit of weight in the metric system; weight of one cubic centimeter of water at 4° centigrade

______e. Weight of a substance contained in one milliliter (1 cc) of a normal solution

______f. Tablets which are covered with a substance that does not dissolve until reaching the intestine

______g. Within a muscle

______h. Beneath the skin

______i. Unit of weight in the apothecaries' system; determined by the average weight of a grain of wheat

______j. Within a vein

______k. Unit of linear measurement in the metric system

1. Hypodermic or subcutaneous
2. Milliequivalent
3. Intradermal
4. Liter
5. Grain
6. Meter
7. Enteric coated
8. Gram
9. Intravenous
10. Intramuscular
11. Apothecary

2. Discuss the systems of measurement.

3. Write the values for the prefixes used in the metric system as listed below.

___________ a. Unit

___________ b. Micro

___________ c. Hecto

___________ d. Centi

___________ e. Deka or deca

___________ f. Milli

___________ g. Deci

___________ h. Kilo

4. Write the symbols for the units of measurement in the metric system listed below.

__________a. Kilogram

__________b. Gram

__________c. Microgram

__________d. Cubic centimeter

__________e. Liter

__________f. Milligram

5. Write the equivalent measurements for units of dry weight in the metric system.

a. __________grams = 1 kilogram

b. 1,000 milligrams = __________grams

6. Write the equivalent measurements for units of liquid volume in the metric system.

a. __________milliliters = 1 liter

b. __________liters = 1,000 cubic centimeters

7. Write the symbols for the units of measurement in the apothecaries' system.

__________a. Grain

__________b. Gallon

__________c. Ounce

__________d. Minim

__________e. Pound

__________f. Dram

__________g. Quart

__________h. Pint

8. Write the equivalent measurements for the units of dry weight in the apothecaries' system.

a. __________ounces = 1 pound, pd, or lb

b. 60 grains = __________dram (dr) or __________

c. __________drams = 1 ounce (oz) or __________

9. Write the equivalent measurements for units of liquid volume in the apothecaries' system.

   a. ____________pints = 1 quart

   b. 4 quarts = ____________gallon

   c. 1 fluidram = ___________minims

   d. ____________ounces = 1 pint

   e. 1 fluid ounce = ____________drams

10. Write the symbols for the units of household measurement.

   a. Drop = ____________

   b. Measuring cup = ____________

   c. Tablespoon = ____________

   d. Teaspoon = ____________

11. Write the equivalent measurements for the units of household measurement.

   a. ____________ounces = 2 tablespoons

   b. 1 teacupful = ____________ounces

   c. 1 teaspoon = ____________drops

   d. ____________measuring cup = 8 ounces = ____________tablespoons = ____________ glassful

   e. ____________tablespoons = 4 teaspoons

   f. ____________ounces = ___________ measuring cups = 1 pint

   g. 32 ounces = ___________measuring cups = ___________ quarts

12. Write the equivalent measures of weight in the blanks provided.

Metric	Apothecaries'	Household
0.1 Gm	a. ______gr	
b. ______Gm	15 gr	c. ______tsp
4 Gm	d. ______dr	e. ______tsp

f. _____Gm	g. _____oz	8 tsp
60 mg	h. _____gr	
i. _____mg	1/4 gr	
10 mg	j. _____gr	
k. _____mg	1/150 gr	
1.0 kg		l. _____lb

13. Write the equivalent measures of volume in the blanks provided.

Metric	Apothecaries'	Household
a. _____cc	15 m	b. _____gtts
4 cc	c. 60m/_____dr	d. _____gtts/ _____tsp
e. _____cc	1/2 oz	f. _____tsp/ _____tbsp/ _____oz
30 cc	g. _____dr/_____oz	h. _____tsp/ _____tbsp
i. _____to_____cc	8 oz	j. _____glassful
500 cc	k. _____pt	l. _____measuring cups
m. _____cc/ _____liter	1 qt	n. _____measuring cups

14. Write the meanings of the abbreviations selected by the instructor.

WEIGHTS, MEASURES, AND ABBREVIATIONS
UNIT III

ANSWERS TO TEST

1. a. 4
   b. 3
   c. 11
   d. 8
   e. 2
   f. 7
   g. 10
   h. 1
   i. 5
   j. 9
   k. 6

2. Discussion should include:

   a. Equivalent measurements are approximate

      1) One milliliter actually equals 1.000028 cubic centimeters; one teaspoon equals 4 to 5 ml

      2) Pharmacists consider an error of 10% in changing from one system to another as negligible; this safe margin of error is already considered in the markings of a medicine glass

   b. Apothecaries'

      1) Devised by the Greeks and the Romans in ancient times

      2) Based measurements on weights and volumes of articles in everyday use, such as a grain of wheat, a coin or small stone, or a container of liquid

      3) Used commonly by British and Americans

      4) Uses symbols or abbreviations and Roman numerals for written measurements of medications

   c. Metric

      1) Invented by the French in late eighteenth century

      2) Based on the decimal system, using units and multiples of ten

      3) Uses abbreviations and Arabic numerals for written measurements of medications

   d. Household

      1) Uses common household utensils when medications are given at home

      2) Should be used only when other measurements are not readily available because it is approximate

3. a. One 1.0
   b. One-millionth 0.000001
   c. One hundred 100.0
   d. One-hundredth 0.01
   e. Ten 10.0
   f. One-thousandth 0.001
   g. One-tenth 0.1
   h. One thousand 1000.0

4. a. kg
   b. Gm
   c. mcg
   d. cc
   e. L
   f. mg

5. a. 1000
   b. 1

6. a. 1000
   b. 1

7. a. gr
   b. gal
   c. oz or ℥
   d. m
   e. pd or lb
   f. dr or ʒ
   g. qt
   h. pt

8. a. 12
   b. 1, ʒ
   c. 8, ℥

9. a. 2
   b. 1
   c. 60
   d. 16
   e. 8

10. a. gtt
    b. c
    c. T or tbsp
    d. t or tsp

11. a. 1
b. 6
c. 60
d. 1, 16, 1
e. 1
f. 16, 2
g. 4, 1

12. a. 1 1/2
b. 1
c. 1/4
d. 1
e. 1
f. 30
g. 1
h. 1
i. 15
j. 1/6
k. 0.4
l. 2.2

13. a. 1
b. 15
c. 1
d. 60, 1
e. 15
f. 4, 1, 1/2
g. 8, 1
h. 8, 2
i. 240 to 250
j. 1
k. 1
l. 2
m. 1000, 1
n. 4

14. Answers will be determined by the abbreviations selected by the instructor.

COMPUTING DOSAGES
UNIT IV

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to state formulas for computing dosages and solve problems related to each formula. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. State two formulas for changing grams to milligrams.
2. Apply the formulas for changing grams to milligrams.
3. State two formulas for changing milligrams to grams.
4. Apply the formulas for changing milligrams to grams.
5. State two formulas for computing fractional dosages of tablets.
6. Apply the two formulas for computing fractional dosages.
7. State the formula for computing liquid dosage.
8. List three ways the formula may be used to compute liquid dosage.
9. Apply the formula for computing liquid dosage.
10. State Young's Rule for computing children's dosage.
11. Apply Young's Rule.
12. State Fried's Law for computing infant's dosage.
13. Solve problems using Fried's Law.
14. State Clark's Rule for computing children's dosage.
15. Solve problems using Clark's Rule.

COMPUTING DOSAGES
UNIT IV

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and assignment sheets.

   C. Discuss information and assignment sheets.

   D. Assist with assignment sheets.

   E. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Complete assignment sheets.

   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Assignment sheets

      1. Assignment Sheet #1--Convert Grams to Milligrams; Milligrams to Grams

      2. Assignment Sheet #2--Compute a Fractional Dosage of a Tablet

      3. Assignment Sheet #3--Compute Liquid Dosage

      4. Assignment Sheet #4--Compute Children's Dosage

D. Answers to assignment sheets

E. Test

F. Answers to test

II. References:

A. Asperheim, Mary K. *Pharmacology for Practical Nurses.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1967.

B. Dison, Norma. *Simplified Drugs and Solutions for Nurses.* St. Louis, Missouri: The C. V. Mosby Company, 1972.

C. Skelley, Esther G. *Medications and Mathematics for the Nurse.* Albany, New York: Delmar Publishers, 1972.

D. Squire, Jessie E. and Jean M. Welch. *Basic Pharmacology for Nurses.* St. Louis, Missouri: The C. V. Mosby Company, 1973.

COMPUTING DOSAGES
UNIT IV

INFORMATION SHEET

I. Formulas for changing grams (Gm) to milligrams (mg)

   A. Multiply the number of grams by 1000

   B. Move the decimal point three places to the right

II. Applying the formulas

   Change 0.016 Gm to mg

   A.

$$\begin{array}{r} 0.016 \\ \times\ 1000 \\ \hline 16.000 \end{array} = 16 \text{ mg}$$

   B. 0.016 move decimal point to the right three places

$$\underset{\curvearrowright}{0.016} = 16.0 \text{ mg}$$

III. Formulas for changing milligrams to grams

   A. Divide the number of milligrams by 1000

   B. Move the decimal point three places to the left

IV. Applying the formulas

   Change 13 mg to Gm

   A.

$$\begin{array}{rr} & .013 \\ 1000 & \overline{)\,13.000} \\ & \underline{1000} \\ & 3000 \\ & \underline{3000} \end{array}$$

   B. $13.0 \text{ mg} = \underset{\curvearrowleft}{0013.0} = 0.013$

V. Computing a fractional dosage of tablets

   A. Before computing dosages for a part of a tablet, units of measurement must be in the same system of measurement

      Example: The physician has ordered one grain of medication. The medication on hand is 120 milligram tablets. In order to determine what portion of a tablet to give, convert the physician's order to the same measurement as the medicine on hand. One grain is equal to sixty milligrams; therefore, 60 mg is used in computing dosage.

INFORMATION SHEET

B. Dosage may be computed by

1. Fraction formula--Dose desired divided by dose on hand equals part of tablet to be used

$$\frac{\text{Dose desired}}{\text{Dose on hand}} = \text{Part of tablet to be used}$$

2. Proportion formula--Dose on hand to one tablet equals dose desired to part of tablet to be used

(NOTE: Let X stand for part of tablet to be used.)

Dose on hand : one tablet = dose required : X

VI. Applying the formulas

Amount ordered--1/4 grain
Tablets on hand--30 mg

A. Convert 1/4 gr to mg 1/4 gr = 15 mg

B. Solve the problem

1. Using fraction formula

$$\frac{15}{30} = \frac{1}{2} \text{ of tablet to be given} \qquad \frac{15\text{ mg}}{30\text{ mg}} = \frac{15}{30} = \frac{1}{2}$$

2. Using proportion formula

30 mg : 1 tab = 15 mg : X tab

30 : 1 = 15 : X (The product of the two outside numbers equals the product of the two inside numbers)

$$30 \times X = 1 \times 15$$

$$30X = 15$$

$$X = 15 \div 30$$ (Change the side and change the sign)

$$X = \frac{15}{30}$$

$$X = \frac{1}{2}$$ of tablet to be given

INFORMATION SHEET

VII. Formula for computing liquid dosages--Invert the dose on hand; multiply by the dose desired; multiply by the quantity of solution containing the dose on hand; equals the quantity of solution containing the desired dose

(Invert dose on hand x dose desired x quantity of dose on hand = quantity of desired dose)

VIII. Ways formula may be used to compute dosages of liquid medications

(NOTE: The dose on hand and the dose desired must be stated in the same measurement terms; that is, both must be given in grains or both must be given in grams or some other identical measure.)

A. When the strength per volume is given on the label

B. When a portion of a tablet is to be given and the tablet cannot be divided evenly by breaking it

C. To compute the amount of solvent needed to dissolve a tablet when a portion of a tablet is to be given

(NOTE: Since tablets for injection cannot easily be divided into smaller amounts, it will be necessary to dissolve the tablets in a liquid. The correct fractional amount of the solution will then be administered to the patient. When medication is injected subcutaneously, no more than two ccs should be given in one site.)

IX. Using the formula

A. When medication is in liquid form

Physician's order--10,000 U of penicillin

Dose on hand--50,000 U per 2 cc

$$\frac{1}{50{,}000}\ \text{U} \times 10{,}000\ \text{U} \times 2\ \text{cc} = X\ \text{cc}$$

$$\frac{1}{50{,}000} \times \frac{10{,}000}{1} \times \frac{2}{1} \times \frac{20{,}000}{50{,}000} = \frac{2}{5}\ \text{cc to be given}$$

B. When a tablet cannot be divided evenly by breaking it

Physician's order--Sodium luminal 60 mg (for a child)

Dose on hand--Sodium luminal 300 mg

$$\frac{1}{300}\ \text{mg} \times 60\ \text{mg} \times 5\ \text{cc} = X\ \text{cc}$$

$$\frac{1}{300} \times \frac{60}{1} \times \frac{5}{1} = \frac{300}{300} = 1\ \text{cc}$$

Dissolve sodium luminal 300 mg in 5 cc fluid. Give 1 cc of the mixture to the patient

C. To compute the amount of solvent needed to disolve a tablet when a portion of a tablet is to be given by injection

(NOTE: In solving this type of problem, you will compute the quantity of solution needed to dissolve the dose on hand. Use your judgment to determine the amount of solution to be given, depending upon the mode of administration. Usually one or two cubic centimeters is a desirable quantity to give.)

Invert the dose on hand; multiply by the dose desired; multiply by X, the unknown amount of solvent; equals the amount of solution desired to give

(Invert dose on hand x dose desired x X amount of solvent = desired amount to give)

Physician's order--Morphine gr 1/6 "H"
Dose on hand--Morphine sulfate 15 mg
Desired amount of solution to give--1 cc

Convert gr 1/6 to mg first   gr 1/6 = 10 mg

$$\frac{1}{15} \text{ mg} \times 10 \text{ mg} \times X = 1 \text{ cc}$$

$$\frac{1}{15} \times \frac{10}{1} \times X = 1$$

$$\frac{10}{15} X = 1$$

$$X = 1 \div \frac{10}{15}$$

$$X = 1 \times \frac{15}{10}$$

$$X = \frac{15}{10} = 1\tfrac{1}{2} \text{ cc}$$

Dissolve morphine sulfate 15 mg in 1½ cc fluid. Give 1 cc of the mixture to the patient by hypodermic injection

X. Young's Rule Computed by age

Divide the age of the child by the age of the child plus twelve; multiply by the average adult dose; this product equals the child's dose

$$\frac{\text{Age of child}}{\text{Age of child} + 12} \times \text{average adult dose} = \text{child's dose}$$

INFORMATION SHEET

XI. Applying Young's Rule

The average dose of phenobarbital is 30 mg; compute the amount to give a four-year-old child

$$\frac{4}{4 + 12} \times 30 \text{ mg} = \frac{120}{16} = 7\tfrac{1}{2} \text{ mg} \quad (\tfrac{1}{4} \text{ of the adult dose})$$

XII. Fried's Law--Used for calculation of dosage for infants under two years

Divide the age in months of the infant by 150; multiply by the average adult dose; the product equals the infant's dose

$$\frac{\text{Age in months}}{150} \times \text{average adult dose} = \text{infant's dose}$$

XIII. Applying Fried's Law

The average adult dose of phenobarbital is 30 mg; compute the amount to give a six-month-old child

$$\frac{6}{150} \times 30 \text{ mg} = \frac{180}{150} = 1\frac{1}{5} \text{ mg}$$

XIV. Clark's Rule--Computed by weight

$$\frac{\text{Child's weight in pounds}}{150} \times \text{average adult dose} = \text{child's dose}$$

XV. Applying Clark's Rule

The average adult dose of phenobarbital is 30 mg; compute the amount to give a forty-pound child

$$\frac{40}{150} \times 30 = \frac{1200}{150} = 8 \text{ mg child's dose}$$

COMPUTING DOSAGES
UNIT IV

ASSIGNMENT SHEET #1--CONVERT GRAMS TO MILLIGRAMS; MILLIGRAMS TO GRAMS

Solve the following problems, showing all work on this page.

1. 3 Gm = _____mg
2. 1½ Gm = ________ mg
3. 3/4 Gm = _____mg
4. 0.045 Gm = _____mg
5. 0.02 Gm = _____mg
6. 15 mg = _____Gm
7. 500 mg = _____Gm
8. 125 mg = _____Gm
9. 7½ mg = ________ Gm
10. 1500 mg = _____Gm

COMPUTING DOSAGES
UNIT IV

ASSIGNMENT SHEET #2--COMPUTE A FRACTIONAL DOSAGE OF A TABLET

Solve the following problems, showing all work on this page. Determine how many tablets or what portion of tablets will be used. Solve the problems by using (a) fraction and (b) proportion methods.

1. The dose ordered is 6 mg; the tablets on hand are 12 mg.

2. The dose ordered is 15 mg; the tablets on hand are 25 mg.

3. The dose ordered is gr 1/60; the tablets on hand are .6 mg. Change gr 1/60 to mg first.

4. The dose ordered is 10 mg; the tablets on hand are 15 mg.

5. The dose ordered is 0.6 Gm; the tablets on hand are 300 mg. Change 0.6 Gm to mg first.

ASSIGNMENT SHEET #2

6. The dose ordered is 1/4 gr; tablets on hand are 1/6 gr.

COMPUTING DOSAGES
UNIT IV

ASSIGNMENT SHEET #3--COMPUTE LIQUID DOSAGE

Compute the amount of liquid medicine to be given when a specific dose is ordered and the label on the container states the amount of the drug in a given amount of solution. Show your work in solving these problems.

1. The doctor orders morphine sulfate, gr 1/6 H. The tubex syringe is labeled 15 mg/2 cc.

2. The doctor's order reads sodium salicylate gr XV q4h. The medication on hand is labeled gr XX per 4 cc.

3. The physician orders streptomycin 0.25 Gm. The medication on hand is labeled 500 mg per cc.

ASSIGNMENT SHEET #3

4. The order reads penicillin 150,000 U(IM) bid. The vial is marked 3,000,000 U per 10 ml.

5. The doctor has ordered chloral hydrate gr XV. The bottle is labeled gr X in ℥i.

6. The doctor orders meperidine hydrochloride 50.0 mg. The prepared syringe is labeled 0.1 Gm in 1 ml.

ASSIGNMENT SHEET #3

7. The doctor orders codeine phosphate gr $\overline{ss}$ H. The tablets on hand are 60 mg.

8. The doctor orders cortisone acetate 62.5 mg. The dose on hand is a suspension with a label reading 25.0 mg in 1 cc.

9. The doctor orders Benadryl 35 mg IM. The dose on hand is contained in a vial labeled 50 mg/ml.

ASSIGNMENT SHEET #3

10. The order has been given for 0.3 Gm of potassium iodide. The bottle is labeled Gm ī in 1 cc.

11. The order reads morphine sulfate gr 1/8 H. The tablets on hand are gr 1/6.

12. Prepare atropine gr 1/150 H from gr 1/100 tablets.

COMPUTING DOSAGES
UNIT IV

ASSIGNMENT SHEET #4--COMPUTE CHILDREN'S DOSAGE

Compute the dosages in the following problems using one of the formulas for children's dosages. State the name of the formula you used.

1. The adult dosage is 15 gtts. What is the dose for a three-year-old child?

2. The adult dose is 1 Gm. How many milligrams should be given to a ten-month-old child?

3. The adult dose is 50 mg. How much would be given to a twenty-five pound child?

ASSIGNMENT SHEET #4

4. If the adult dose is ½ grain, how many milligrams would be given to a nine-month-old infant? (½ gr = 30 mg)

5. The adult dose is two drams. How many cc should be given to a twenty-pound infant? (1 dram = 4 cc)

6. The average adult dose is 2 mg. Compute the dose for an eight-year-old child.

COMPUTING DOSAGES
UNIT IV

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

1. a. 3 Gm = 3.000 = 3000 mg

   b. 3 Gm x 1000 = 3000 mg

2. a. 1½ Gm = 1.500 = 1500 mg

   b. 1.5 Gm x 1000 = 1.5 x 1000 = 1500 mg

3. a. 3/4 Gm = .750 = 750 mg

   b. .750 x 1000 = 750 mg

4. a. 0.045 Gm = 0.045 = 45 mg

   b. 0.045 x 1000 = 45 mg

5. a. 0.02 Gm = 0.020 = 20 mg

   b. 0.02 x 1000 = 20 mg

6. a. 15 mg = 0015. = 0.015 Gm

   b. 15 ÷ 1000 = 0.015 Gm

7. a. 500 mg = 0500. = 0.5 Gm

   b. 500 ÷ 1000 = 0.5 Gm

8. a. 125 mg = 0125. mg = 0.125 Gm

   b. 125 ÷ 1000 = .125 Gm

9. a. 7½ mg = 0007.5 = 0.0075 Gm

   b. 7½ ÷ 1000 = .0075 Gm

10. a. 1500 mg = 1500. = 1.5 Gm

    b. 1500 ÷ 1000 = 1.5 Gm

Assignment Sheet #2

1. a. $\frac{6 \text{ mg}}{12 \text{ mg}} = \frac{6}{12} = \frac{1}{2}$ tablets to be used

   b. 12 mg : 1 tab = 6 mg : X

   $12X = 6$

   $X = 6 \div 12$

   $X = \frac{6}{12}$

   X = ½ tablet to be used

2. a. $\frac{15 \text{ mg}}{25 \text{ mg}} = \frac{15}{25} = \frac{3}{5}$ tablet

   b. 25 mg : 1 tab = 15 mg : X tab

   25 : 1 = 15 : X

   $25X = 15$

   $X = \frac{15}{25}$ or $\frac{3}{5}$ tablet

3. gr $\frac{1}{60}$ = 1 mg

   a. $\frac{1 \text{ mg}}{.6 \text{ mg}} = \frac{10}{6} = 1\frac{4}{6}$ or $1\frac{2}{3}$ tablets

   b. .6 mg : 1 tab = 1 : X tab

   $.6X = 1$

   $6X = 10$

   $X = \frac{10}{6}$

   $X = 1\frac{4}{6}$ or $1\frac{2}{3}$ tablets

4. a. $\frac{10 \text{ mg}}{15 \text{ mg}} = \frac{10}{15} = \frac{2}{3}$ tablet

   b. 15 mg : 1 tab = 10 mg : X

   15 : 1 = 10 : X

   $15X = 10$

   $X = \frac{10}{15}$ or $\frac{2}{3}$ tablet

5. 0.6 Gm = 600 mg

a. $\frac{600 \text{ mg}}{300 \text{ mg}} = \frac{600}{300} = \frac{6}{3}$ or 2 tablets

b. 300 mg : 1 tab = 600 mg : X

$300 : 1 = 600 : X$

$300X = 600$

$X = \frac{600}{300} = \frac{6}{3}$

X = 2 tablets

6. a. $\frac{\frac{1}{4}\text{ gr}}{\frac{1}{6}\text{ gr}} = \frac{\frac{1}{4}}{\frac{1}{6}} = \frac{1}{4} \div \frac{1}{6} = \frac{1}{4} \times \frac{6}{1} = \frac{6}{4} = 1\,\frac{2}{4}$ or $1\,\frac{1}{2}$ tablets

b. $\frac{1}{6\text{ gr}}$: 1 tab = $\frac{1}{4}$: X tab

$\frac{1}{6} : 1 = \frac{1}{4} : X$

$\frac{1}{6}X = \frac{1}{4}$

$X = \frac{1}{4} \div \frac{1}{6} = \frac{1}{4} \times \frac{6}{1} = 1\,\frac{2}{4}$ or $1\,\frac{1}{2}$ tablets

Assignment Sheet #3
(Some of the answers will vary with the amount of solvent used.)

1. $\frac{1}{15\text{ mg}} \times 10\text{ mg} \times 1\text{ cc} = X\text{ cc}$

$\frac{1}{15} \times \frac{10}{1} \times 1 = \frac{10}{15} = \frac{2}{3}$ cc to be given

2. $\frac{1}{20\text{ gr}} \times 15\text{ gr} \times 4\text{ cc} = X\text{ cc}$

$\frac{1}{20} \times \frac{15}{1} \times \frac{4}{1} = \frac{60}{20} = 3$ cc to be given

3. 0.25 Gm = 250 mg

$$\frac{1}{500\text{ mg}} \times 250\text{ mg} \times 1\text{ cc} = \text{X cc}$$

$$\frac{1}{500} \times \frac{250}{1} \times 1 = \frac{250}{500} = \frac{1}{2}\text{ cc to be given}$$

4. $$\frac{1}{3{,}000{,}000\text{ U}} \times 150{,}000\text{ U} \times 10\text{ ml} = \text{X ml}$$

$$\frac{1}{3{,}000{,}000} \times \frac{150{,}000}{1} \times \frac{10}{1} = \frac{1{,}500{,}000}{3{,}000{,}000} = \tfrac{1}{2}\text{ ml to be given}$$

5. $$\frac{1}{10}\text{ gr} \times 15\text{ gr} \times \quad = \text{X}$$

$$\frac{1}{10} \times \frac{15}{1} \times 1 = \frac{15}{10} = 1\tfrac{1}{2}\text{ drams to be given}$$

6. 0.1 Gm = 100 mg

$$\frac{1}{100}\text{ mg} \times 50\text{ mg} \times 1\text{ ml} = \text{X ml}$$

$$\frac{1}{100} \times \frac{50}{1} \times 1 = \frac{50}{100} = \tfrac{1}{2}\text{ ml to be given}$$

7. gr ss = 30 mg
quantity to give 1 cc

$$\frac{1}{60\text{ mg}} \times 30\text{ mg} \times \text{X cc} = 1\text{ cc}$$

$$\frac{1}{60\text{ mg}} \times \frac{30}{1} \times \text{X} = 1$$

$$\frac{30}{60}\text{X} = 1$$

$$\text{X} = 1 \div \frac{30}{60}$$

$$\text{X} = 1 \times \frac{60}{30}$$

$$\text{X} = 2$$

Dissolve 60 mg tablets in 2 cc of fluid and give 1 cc

8. $\frac{1}{25\text{ mg}} \times 62.5\text{ mg} \times 1\text{ cc} = X\text{ cc}$

$\frac{1}{250} \times \frac{625}{1} \times 1 = \frac{625}{250} = 2\frac{1}{2}$ cc to be given

9. $\frac{1}{50\text{ mg}} \times 35\text{ mg} \times 1\text{ cc} = X\text{ cc}$

$\frac{1}{50} \times \frac{35}{1} \times 1 = \frac{35}{50} = \frac{7}{10}$ cc to be given

10. $\frac{1}{1\text{ Gm}} \times 0.3\text{ Gm} \times 1 = X\text{ cc}$

$\frac{1}{1} \times \frac{3}{10} \times 1 = \frac{3}{10}$ cc to be given

11. $\frac{6}{1\text{ gr}} \times \frac{1}{8\text{ gr}} \times X\text{ cc} = 1\text{ cc}$

$$\frac{6}{1} \times \frac{1}{8} \times X = 1$$

$$\frac{6}{8}X = 1$$

$$\frac{3}{4}X = 1$$

$$X = 1 \div \frac{3}{4}$$

$$X = 1 \times \frac{4}{3}$$

$$X = 1\frac{1}{3}$$

Dissolve gr $\frac{1}{6}$ in $1\frac{1}{3}$ cc of fluid and give 1 cc to the patient

12. $\frac{100}{1} \times \frac{1}{150} \times X = 1\text{ cc}$

$$\frac{100}{150}X = 1$$

$$X = 1 \div \frac{100}{150}$$

$$X = 1 \times \frac{150}{100}$$

$$X = \frac{150}{100} = 1\frac{1}{2}$$

Dissolve Atropine gr $\frac{1}{100}$ in $1\frac{1}{2}$ cc of fluid and give 1 cc to the patient

Assignment Sheet #4

1. Young's Rule

$$\frac{3}{3+12} \times 15 \text{ gtts} = \frac{\overset{1}{\cancel{3}}}{\underset{3}{\cancel{15}}} \times 15 = 5 \text{ gtts}$$

2. Fried's Law

$$\frac{10}{150} \times 1 \text{ Gm} = \frac{1}{15} \text{ of } 1 \text{ Gm} = \frac{1}{15} \text{ of } 1000 \text{ mg} = 66\,\frac{2}{3} \text{ mg}$$

3. Clark's Rule

$$\frac{25}{150} \times 50 \text{ mg} = \frac{\overset{1}{\cancel{25}}}{\underset{6}{\cancel{150}}} \times 50 = \frac{50}{6} = 8\,\frac{2}{3} \text{ mg}$$

4. Fried's Law

$$\frac{9}{150} \times 30 \text{ mg} = \frac{9}{\underset{5}{\cancel{150}}} \times \frac{\overset{1}{\cancel{30}}}{1} = \frac{9}{5} \text{ or } 1\,\frac{4}{5} \text{ mg (1.8 mg)}$$

5. Clark's Rule

$$\frac{20}{150} \times 8 \text{ cc} = \frac{2\cancel{0}}{15\cancel{0}} \times \frac{8}{1} = \frac{16}{15} \text{ or 1 cc approximately}$$

6. Young's Rule

$$\frac{8}{8+12} \times 2 \text{ mg} = \frac{\overset{2}{\cancel{8}}}{\underset{5}{\cancel{20}}} \times 2 = \frac{4}{5} \text{ mg}$$

COMPUTING DOSAGES
UNIT IV

TEST

1. State two formulas for changing grams to milligrams.

   a.

   b.

2. Apply the formulas for changing grams to milligrams. Use each formula to solve two of the problems below and show all your work.

   a. 1.2 Gm = __________ mg

   b. 0.0375 Gm = __________ mg

   c. 0.03 Gm = __________ mg

   d. 0.75 Gm = __________ mg

3. State two formulas for changing milligrams to grams.

   a.

   b.

4. Apply the formulas for changing milligrams to grams. Use each formula to solve two of the problems and show all your work.

   a. 10 mg = ___________ Gm

   b. 250 mg = ___________ Gm

   c. 875 mg = ___________ Gm

   d. 2 mg = ____________ Gm

5. State two formulas for computing fractional dosages of tablets.

   a.

   b.

6. Apply the two formulas for computing fractional dosages of tablets. Use each formula to solve two of the problems and show all your work.

   a. 25 mg ordered; dose on hand 60 mg

   b. 2 mg ordered; dose on hand 3 mg

   c. 1/30 gr ordered; dose on hand 1/6 gr

   d. 60 mg ordered; dose on hand 40 mg

7. State the formula for computing liquid dosage.

8. List three ways the formula may be used to compute liquid dosage.

   a.

   b.

   c.

9. Apply the formula for computing liquid dosage to the following problems. Show all your work.

   a. The doctor has ordered gr 1/4 of elixir of phenobarbital. The label on the bottle shows that 1 cc contains 1/2 gr.

   b. The doctor orders sodium salicylate gr XV. The dose on hand is in solution labeled 0.6 Gm in 4 cc.

   c. The doctor orders 300,000 U of penicillin IM. The bottle label reads 500,000 U per cc.

   d. The doctor orders erythromycin suspension 400 mg. The bottle is labeled 0.2 Gm in 5 cc.

   e. The doctor's order says to give morphine sulfate gr 1/6. The dose on hand is 15 mg per cc (gr 1/6 = 10 mg).

   f. The physician orders sodium bicarbonate gr XV. The dose on hand is gr V = 4 ml.

10. State Young's Rule for computing children's dosage.

11. Apply Young's Rule in computing the correct dosage in the following problems.

    a. A cough mixture contains gr 1/4 of codeine phosphate per dram. What is the dosage for a three-year-old child? Give answer in cc.

    b. How many milligrams of sulfadiazine should be given a four-year-old child when the adult dose is 1 gram?

    c. The adult dose of adrenaline is 0.3 mg. How much should be given to an eight-year-old child?

12. State Fried's Law for computing infants' dosage.

13. Solve the following problems using Fried's Law.

    a. The adult dose of luminal is 30 mg. What is the dosage for an infant eighteen months old?

b. How much Elixir of phenobarbital should a ten-month-old child receive? The adult dose is 1 cc containing 20 mg.

c. The adult dose of Achromycin is 250 mg. Compute the dose for a child of one year.

14. State Clark's Rule for computing children's dosage.

15. Solve the following problems using Clark's Rule.

a. The adult dose of Achromycin is 250 mg. What is the dose for a forty-pound child?

b. The average adult dose of aspirin is gr x. What is the dosage for a twenty-pound infant?

c. The adult dose of phenobarbital is 30 mg. What is the amount a twenty-five pound child should receive?

COMPUTING DOSAGES
UNIT IV

ANSWERS TO TEST

1. a. Multiply the number of grams by 1000

   b. Move the decimal point three places to the right

2. a. Answer--1200 mg

   1) $\begin{array}{r} 1.2 \\ \times 1000 \\ \hline 1200.0 \end{array}$
   2) 1.200 Gm = 1200 mg

   b. Answer--35.7 mg

   1) $\begin{array}{r} 0.0375 \\ \times 1000 \\ \hline 35.7000 \end{array}$
   2) 0.0375 Gm = 35.7 mg

   c. Answer--30 mg

   1) $\begin{array}{r} 0.03 \\ \times 1000 \\ \hline 30.00 \end{array}$
   2) 0.030 Gm = 30 mg

   d. Answer--750 mg

   1) $\begin{array}{r} 0.75 \\ \times 1000 \\ \hline 750.00 \end{array}$
   2) 0.750 Gm = 750 mg

3. a. Divide the number of milligrams by 1000

   b. Move the decimal point three places to the left

4. a. Answer--0.010 Gm

   1) $1000\,\overline{)10\text{ mg}} = \begin{array}{rr} & .010 \\ 1000 & \overline{)10.000} \\ & 1000 \end{array}$

   2) 0010. mg = 0.010 Gm

   b. Answer--0.250 Gm

   1) $1000\,\overline{)250\text{ mg}} = \begin{array}{rr} & .250 \\ 1000 & \overline{)250.000} \\ & 2000 \\ & 5000 \\ & 5000 \end{array}$

   2) 0250. mg = 0.250 Gm

c. Answer--0.875 Gm

1) $1000\,\overline{)875\text{ mg}} =$

$$\begin{array}{rr} & .875 \\ 1000 & \overline{)875.000} \\ & \underline{8000} \\ & 7500 \\ & \underline{7000} \\ & 5000 \\ & \underline{5000} \end{array}$$

2) 0875. mg = 0.875 Gm

d. Answer--0.002 Gm

1) $1000\,\overline{)2\text{ mg}} =$

$$\begin{array}{rr} & .0020 \\ 1000 & \overline{)2.0000} \\ & 2000 \end{array}$$

2) 0002.0 mg = 0.002 Gm

5. a. Fraction formula--$\dfrac{\text{Amount desired}}{\text{Amount on hand}}$ = Part of tablet to be used

b. Proportion formula--Amount on hand : 1 tablet = amount desired : X tablets

6. a. Answer--5/12 of a tablet

1) $\dfrac{25\text{ mg}}{60\text{ mg}} = \dfrac{25}{60} = \dfrac{5}{12}$

2) 60 mg : 1 tab = 25 mg : X tab

$$\begin{aligned} 60 : 1 &= 25 : X \\ 60X &= 25 \\ X &= 25 \div 60 \\ X &= \frac{25}{60} = \frac{5}{12} \end{aligned}$$

b. Answer--2/3 of a tablet

1) $\dfrac{2\text{ mg}}{3\text{ mg}} = \dfrac{2}{3}$

2) 3 mg : 1 tab = 2 mg : X tab

$$\begin{aligned} 3 : 1 &= 2 : X \\ 3X &= 2 \\ X &= 2 \div 3 = \frac{2}{3} \end{aligned}$$

c. Answer--1/5 tab

1) $$\frac{\;\dfrac{1}{30\text{ gr}}\;}{\;\dfrac{1}{6\text{ gr}}\;} = \frac{\;\dfrac{1}{30}\;}{\;\dfrac{1}{6}\;} = \frac{1}{30} \div \frac{1}{6} = \frac{1}{30} \times \frac{6}{1} =$$

$$\frac{6}{30} = \frac{1}{5}$$

2) $\frac{1}{6}$ gr : 1 tab = $\frac{1}{30}$ gr : X tab

$$\frac{1}{6} : 1 = \frac{1}{30} : X$$

$$\frac{1}{6}X = \frac{1}{30}$$

$$X = \frac{1}{30} \div \frac{1}{6}$$

$$X = \frac{1}{30} \times \frac{6}{1} = \frac{6}{30} = \frac{1}{5}$$

d. Answer--1½ tab

1) $\frac{60 \text{ mg}}{40 \text{ mg}} = \frac{60}{40} = \frac{3}{2} = 1\frac{1}{2}$

2) 40 mg : 1 tab = 60 mg : X tab

$$40X = 60$$

$$X = 60 \div 40$$

$$X = \frac{60}{40} = \frac{3}{2} = 1\frac{1}{2}$$

7. Invert dose on hand x dose desired x quantity of dose on hand = quantity of desired dose

8. a. When the strength per volume is given on the label

   b. When a portion of a tablet is to be given and the tablet cannot be divided evenly by breaking it

   c. To compute the amount of solvent needed to dissolve a tablet when a portion of a tablet is to be given

9. a. Dose on hand--½ gr

   Dose desired--¼ gr

   Quantity of dose on hand--1 cc

   $\frac{2}{1} \times \frac{1}{4} \times 1 = \frac{2}{4}$ = ½ cc to be given

   b. Dose on hand--0.6 Gm

   Dose desired--gr xv = 1 Gm

   Quantity of dose on hand--4 cc

   $\frac{10}{6} \times 1 \times 4 = \frac{10}{6} \times \frac{1}{1} \times \frac{4}{1} = \frac{40}{6} = 6\frac{4}{6}$ or $6\frac{2}{3}$ cc to be given

c. Dose on hand--500,000 U

Dose desired--300,000 U

Quantity of dose on hand--1 cc

$$\frac{1}{500{,}000} \times \frac{300{,}000}{1} \times 1 = \frac{300{,}000}{500{,}000} = \frac{3}{5} \text{ cc to be given}$$

d. Dose on hand--400 mg

Dose desired--0.2 Gm = 200 mg

Quantity of dose on hand--5 cc

$$\frac{1}{400} \times \frac{200}{1} \times 5 = \frac{1000}{400} = \frac{10}{4} = 2\,\frac{2}{4} \text{ or } 2\tfrac{1}{2} \text{ to be given}$$

e. Dose on hand--15 mg

Dose desired--gr 1/6 = 10 mg

Quantity of dose on hand--1 cc

$$\frac{1}{15} \times \frac{10}{1} \times 1 \text{ cc} = \frac{10}{15} = \frac{2}{3} \text{ cc to be given}$$

f. Dose on hand--gr V

Dose desired--gr XV

Quantity of dose on hand--4 ml

$$\frac{1}{5} \times \frac{15}{1} \times \frac{4}{1} = \frac{60}{5} = 12 \text{ ml to be given}$$

10. $$\frac{\text{Age of child}}{\text{Age of child} + 12} \times \text{average adult dose} = \text{child's dose}$$

11. a. Answer--4/5 of 1 cc 1 dram = 4 cc

$$\frac{\text{age } 3}{3 + 12} \times 4 \text{ cc} = \frac{3}{15} \times 4 = \frac{12}{15} = \frac{4}{5}$$

b. Answer--250 mg 1 gm = 100 mg

$$\frac{\text{age } 4}{4 + 12} \times 1000 \text{ mg} = \frac{4}{16} \times 1000 = \frac{1000}{4} = 250$$

c. Answer--.12 mg

$$\frac{\text{age } 8}{8 + 12} \times 0.3 \text{ mg} = \frac{8}{20} \times \frac{3}{10} \times \frac{24}{200} = \frac{12}{100} = .12$$

12. $\frac{\text{Age in months}}{150} \times$ average adult dose = infant's dose

13. a. Answer--3.6 mg

$$\frac{18 \text{ mo}}{150} \times 30 \text{ mg} = \frac{18}{\underset{5}{150}} \times \frac{\overset{1}{30}}{1} = \frac{18}{5} = 3\,\frac{3}{5} \text{ or } 3.6$$

b. Answer-- $\frac{1}{15 \text{ cc}}$ or 1 minim

$$\frac{10 \text{ mo}}{150} \times 1 = \frac{10}{150} = \frac{1}{15 \text{ cc}}$$

c. Answer--20 mg

$$\frac{12 \text{ mo}}{150} \times 250 = \frac{12}{\underset{6}{150}} \times \frac{\overset{10}{250}}{1} = \frac{120}{6} = 20 \text{ mg}$$

14. $\frac{\text{Weight of child in pounds}}{150} \times$ average adult dose = child's dose

15. a. Answer--66.6 mg

$$\frac{40 \text{ lb}}{150} \times 250 = \frac{40}{\underset{6}{150}} \times \frac{\overset{10}{250}}{1} = \frac{400}{6} = 66.6$$

b. Answer-- $1\,\frac{1}{3}$ gr

$$\frac{20 \text{ lb}}{150} \times 10 = \frac{20}{\underset{15}{150}} \times \frac{\overset{1}{10}}{1} = \frac{20}{15} = \frac{4}{3} = 1\,\frac{1}{3}$$

c. Answer--5 mg

$$\frac{25 \text{ lb}}{150} \times 30 = \frac{25}{\underset{5}{150}} \times \frac{\overset{1}{30}}{1} = \frac{25}{5} = 5$$

PREPARATION OF SOLUTIONS
UNIT V

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list general facts concerning solutions and state formulas for preparing solutions. The student should be able to use the formulas to solve problems. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with solutions to the correct definitions.
2. List five general facts concerning solutions.
3. State two formulas for preparing solutions.
4. State three principles concerning the preparation of solutions from pure drugs.
5. State four principles concerning the preparation of solutions from stock solutions.
6. Apply the formulas for preparing solutions from a pure drug.
7. Apply the formulas for preparing solutions from stock solutions.
8. State two rules for preparing normal saline solution.
9. Apply the formula for determining the exact amount of salt to use in preparing normal saline solution.

PREPARATION OF SOLUTIONS
UNIT V

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information and assignment sheets.

  C. Discuss terminal and specific objectives.

  D. Discuss information and assignment sheets.

  E. Assist with assignment sheet.

  F. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Complete assignment sheet.

  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Assignment Sheet #1--Solve Problems for Preparation of Solutions

  D. Answers to assignment sheet

  E. Test

  F. Answers to test

II. References:

A. Falconer, Mary W. et al. *The Drug, The Nurse, The Patient.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1974.

B. Skelley, Esther G. *Medications and Mathematics for the Nurse.* Albany, New York: Delmar Publishers, 1972.

C. Squire, Jessie E. and Jean M. Welch. *Basic Pharmacology for Nurses.* St. Louis, Missouri: The C. V. Mosby Company, 1973.

PREPARATION OF SOLUTIONS
UNIT V

INFORMATION SHEET

I. Terms and definitions

   A. Solution--Liquid containing a dissolved substance

   B. Solute--Substance that is dissolved in a solution

   C. Solvent--Liquid in which another substance (solute) is dissolved

   D. Stock solution--One kept on hand ready for use

   E. Aqueous solution--One in which water is used as the solvent

   F. Tincture--Solution in which alcohol is used as the solvent

   G. Isotonic solution--One which has the same osmotic pressure as that of body cells or fluids

   H. Hypertonic solution--One which has a greater osmotic pressure than that of body cells or fluids

   I. Hypotonic solution--One having an osmotic pressure less than that of body cells or fluids

   J. Normal saline solution--An isotonic solution of a salt, usually sodium chloride

   K. Saturated solution--One that contains all the solute it can dissolve

   L. Supersaturated solution--One which contains more solute than can normally be dissolved at a given temperature

II. General facts concerning solutions

   A. Usually prepared from stronger solutions or from pure drugs

   (NOTE: Pure drugs may be in solid or liquid form. A pure drug is always considered one hundred percent pure unless stated otherwise on the label.)

   B. May be prepared from a combination of one or more solutes in one or more solvents

   (NOTE: Tincture of iodine is a solution of two solutes, iodine and sodium iodine, dissolved in two solvents, alcohol and water.)

   C. Universal or most used solvent is water

   (NOTE: Other solvents include alcohol, acetone, ether, glycerine, chloroform, gelatin, albumin, and oils. When a solvent other than water is used, it is always named on the medicine label.)

INFORMATION SHEET

D. Solutes may be solid, liquid, or gas

E. Solubility of solutes can usually be increased by agitation or by heating the solvent

F. Strength of a solution may be expressed by percent, weight, or volume of the active ingredient or solute

III. Formulas for preparing solutions

A. $\frac{\text{Strength desired}}{\text{Strength on hand}} \times \text{quantity desired} = \text{amount of solute needed}$

B. Amount of drug : desired amount of solution = desired strength of solution : strength on hand

IV. Preparation of solutions from pure drugs

A. Either formula may be used in determining amounts

B. The number 100 should be used in the formulas for "strength on hand" when pure drugs are used

C. One gram may be considered equal to one milliliter or cubic centimeter for purposes of calculation

V. Preparation of solutions from stock solutions

A. Either formula may be used in determining amounts

B. Only weaker solutions may be prepared from stock solutions

C. In calculating, substitute the percentage of the stock solution for "strength on hand" in the formulas

D. The volume of the solute (if liquid) must be subtracted from the total volume desired to determine the amount of solvent to be used

VI. Applying formulas to prepare a solution from a pure drug--Determine how many grams of sodium chloride are needed to prepare 500 cc of a one percent solution

A. $\frac{1\%}{100\%} \times 500 = \frac{1}{100} \times \frac{500}{1} = \frac{5}{1} = 5$ grams

B. $X : 500 = 1\% : 100\%$

$100X = 500$

$X = 5$ grams

INFORMATION SHEET

VII. Applying formulas to prepare a weaker solution from a stock solution--Determine how much of a five percent solution is needed to make 1000 cc of a two percent solution

$\frac{2\%}{5\%} \times 1000 = \frac{2}{5} \times 1000 = \frac{2}{1} \times 200 =$ 400 cc of 5% solution will be added to 600 cc water to prepare 1000 cc

VIII. Preparation of normal saline solution

A. For mouthwashes, gargles, enemas, and douches--Use one teaspoon of salt to one pint of water

B. For more exact dosage, as for dressings or to compute amount of salt needed for uneven amounts of liquid--Multiply the amount of solution needed by 0.9% (.009) to determine the amount of salt to use

IX. Applying the formula for determining the exact amount of salt to prepare normal saline solution--Determine how much salt is needed to make 500 cc of normal saline solution

$500 \times .009 = 4.500$ Gm of salt to 500 cc water

PREPARATION OF SOLUTIONS
UNIT V

ASSIGNMENT SHEET #1--SOLVE PROBLEMS FOR PREPARATION OF SOLUTIONS

Compute the answers to the following problems. Show all your work on this sheet.

1. Prepare one liter of a 1 : 1000 solution from a five percent solution.

2. Prepare one ounce of a one percent solution from a twenty percent solution.

3. Prepare one pint of a 0.5 percent solution from crystals.

ASSIGNMENT SHEET #1

4. How much water must be used to make a one percent solution from four drams of a drug?

5. How much water must be used to make a one liter of five percent solution from a fifty percent solution?

6. Prepare one liter of normal saline solution.

PREPARATION OF SOLUTIONS
UNIT V

ANSWERS TO ASSIGNMENT SHEET #1

1. $\frac{1 : 1000}{5 : 100} \times 1000 = \frac{1}{\cancel{1000}} \times \frac{100}{5} \times \frac{\cancel{1000}}{1} = \frac{100}{5} = 20$

   20 cc of solute + 980 cc of solvent = 1000 cc

2. $\frac{1\%}{20\%} \times 30$ cc (one ounce) $= \frac{30}{20} = 1\frac{1}{2}$

   1½ cc of 20% solution + 28½ cc of solvent = 30 cc (one ounce)

3. $\frac{.5\%}{100\%} \times 500 = \frac{5}{1000} \times \frac{500}{1} = \frac{5}{2} = 2\frac{1}{2}$

   2½ Gm crystals would be dissolved in 500 cc solvent

4. 4 drams : X = 1% : 100%
   16 cc : X = 1 : 100
   X = 1600 cc

   1600 cc of water must be used to make a one percent solution

5. $\frac{5}{50} \times 1000 = \frac{1}{10} \times 1000 = 100$

   100 cc of 50% solution + 900 cc water = 1000 cc

6. 1000 × .009 = 9 Gm of salt (sodium chloride) would be dissolved in 1000 cc of water

PREPARATION OF SOLUTIONS
UNIT V

TEST

1. Match the terms on the right to the correct definitions.

_____a. Liquid containing a dissolved substance

_____b. One having an osmotic pressure less than that of body cells or fluids

_____c. Solution in which alcohol is used as the solvent

_____d. One that contains all the solute it can dissolve

_____e. Substance that is dissolved in a solution

_____f. An isotonic solution of a salt, usually sodium chloride

_____g. One which contains more solute than can normally be dissolved at a given temperature

_____h. Liquid in which another substance is dissolved to form a solution

_____i. One which has the same osmotic pressure as that of body cells or fluids

_____j. One kept on hand ready for use

_____k. One which has a greater osmotic pressure than that of the body cells or fluids

_____l. One in which water is used as the solvent

1. Saturated solution
2. Hypertonic solution
3. Solvent
4. Hypotonic solution
5. Isotonic solution
6. Aqueous solution
7. Solute
8. Stock solution
9. Normal saline solution
10. Solution
11. Supersaturated solution
12. Tincture

2. List five general facts concerning solutions.

a.

b.

c.

d.

e.

3. State two formulas for preparing solutions.

   a.

   b.

4. State three principles concerning the preparation of solutions from pure drugs.

   a.

   b.

   c.

5. State four principles concerning the preparation of solutions from stock solutions.

   a.

   b.

   c.

   d.

6. Apply the formulas for preparing solutions from a pure drug to solve the following problems. (Show all your work.)

   a. Determine how much sodium bicarbonate is needed to prepare 150 cc of a five percent solution.

   b. Prepare a liter of a 1 : 200 solution using 5 Gm tablets.

c. Prepare eight ounces of a 0.5 percent solution using crystals.

7. Apply the formulas for preparing solutions from stock solutions to solve the following problems. (Show your work.)

   a. Prepare a 0.5% hydrogen peroxide solution, using two ounces of a 3% hydrogen peroxide solution.

   b. Prepare 250 cc of a 5% glucose solution from a stock solution of 10% glucose.

   c. How much of a 5 percent solution is needed to make one quart of a 2 percent solution?

8. State two rules for preparing normal saline solution.

   a.

   b.

9. Apply the formula for determining the exact amount of salt to use in preparing normal saline solution to solve the following problems. (Show your work.)

   a. How many grams of sodium chloride are needed to prepare 475 cc of solution?

   b. Determine the amount of salt needed to prepare 850 cc of normal saline solution.

PREPARATION OF SOLUTIONS
UNIT V

ANSWERS TO TEST

1. a. 10
   b. 4
   c. 12
   d. 1
   e. 7
   f. 9
   g. 11
   h. 3
   i. 5
   j. 8
   k. 2
   l. 6

2. Any five of the following:

   a. Usually prepared from stronger solutions or from pure drugs

   b. May be prepared from a combination of one or more solutes in one or more solvents

   c. Universal or most used solvent is water

   d. Solutes may be liquid, solid, or gas

   e. Solubility of solutes can usually be increased by agitation or by heating the solvent

   f. Strength of a solution may be expressed by percent, weight, or volume of the active ingredient or solute

3. a. $\frac{\text{Strength desired}}{\text{Strength on hand}} \times \text{quantity desired} = \text{amount of solute needed}$

   b. Amount of drug : desired amount of solution = desired strength of solution : strength on hand

4. a. Either formula may be used in determining amounts

   b. The number 100 should be used in the formulas for "strength on hand" when pure drugs are used

   c. One gram may be considered equal to milliliter or cubic centimeter for purposes of calculation

5. a. Either formula may be used in determining amounts

   b. Only weaker solutions may be prepared from stock solutions

   c. In calculating, substitute the percentage of the stock solution for "strength on hand" in the formula

d. The volume of the solute (if liquid) must be subtracted from the total volume desired to determine the amount of solvent to be used

6. a.

$$\frac{5}{100} \times 150 = \frac{5}{\underset{10}{\cancel{100}}} \times \frac{\overset{15}{\cancel{150}}}{1} = \frac{75}{10} = 7.5 \text{ Gm sodium bicarbonate}$$

$X : 150 = 5 : 100$
$100X = 750$
$X = 7.5$ Gm sodium bicarbonate

b. $1 : 200 = 0.5\%$

$$\frac{0.5}{100} \times 1000 = \frac{5}{1000} \times 1000 = 5 \text{ Gm}$$ One tablet will be used

$X : 1000 = .5 : 100$
$100X = 500$
$X = 5$ Gm One tablet will be used

c. 8 ounces = 240 cc

$$\frac{0.5}{100} \times 240 = \frac{120.0}{100} = 1.2 \text{ Gm of crystal needed}$$

$X : 240 = 0.5 : 100$
$100X = 120.0$
$X = 1.2$ Gm of crystal needed

7. a. 2 ounces = 60 cc

$$\frac{0.5}{3} \times X = 60$$

$$\frac{0.5}{3}X = 60$$

$$X = 60 \times \frac{3}{0.5}$$

$$X = \frac{180}{0.5} = 360 \text{ cc or 12 ounces of solution prepared}$$

$60 \text{ cc} : X = 0.5 : 3$
$0.5X = 180$

$$X = \frac{180}{0.5} = 360 \text{ cc or 12 ounces}$$

b.

$$\frac{5}{10} \times 250 = \frac{1}{2} \times 250 = 125 \text{ cc of 10\% glucose will be used}$$

$X : 250 = 5 : 10$
$10X = 1250$
$X = 125$ cc

c. 1 quart = 1000 cc

$$\frac{2}{5} \times 1000 = \frac{2000}{5} = 400 \text{ cc of 5\% solution is needed}$$

$$\begin{aligned} X : 1000 &= 2 : 5 \\ 5X &= 2000 \\ X &= 400 \text{ cc} \end{aligned}$$

8. a. For mouthwashes, gargles, enemas, and douches--Use one teaspoon of salt to one pint of water

b. For more exact dosage, as for dressings or to compute amount of salt needed for uneven amounts of liquid--Multiply the amount of solution needed by 0.9% (.009) to determine the amount of salt to use

9. a. 475 x .009 = 4.275 or approximately 4 grams of salt

b. 850 x .009 = 7.650 or approximately 7½ grams of salt

EFFECTS OF DRUGS
UNIT VI

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list factors concerning the selection of medication and channel of administration. The student should be able to discuss purposes for which drugs are given and match types of drug actions to the correct description. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with drug effects to the correct definitions.
2. Discuss the three general purposes for which drugs are given.
3. Tell how patient factors may influence the selection of medication.
4. Tell how drug factors may influence the selection of medication.
5. Tell how other factors may influence the selection of medication.
6. List methods of administration for local effect.
7. List methods of administration for general or systemic effect.
8. Match the types of drug actions to the correct descriptions.
9. Demonstrate the ability to use a drug reference textbook.

EFFECTS OF DRUGS
UNIT VI

SUGGESTED ACTIVITIES

I. Instructor:

- A. Provide students with objective sheet.
- B. Provide students with information sheet.
- C. Discuss terminal and specific objectives.
- D. Discuss information and assignment sheets.
- E. Prepare a display of equipment used in preparing and administering medication for each channel.
- F. Prepare a list of drugs to be used for the assignment sheet.
- G. Give test.

II. Student:

- A. Read objectives.
- B. Study information sheet.
- C. Participate in discussion.
- D. Examine display of medication equipment.
- E. Complete assignment sheet.
- F. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

- A. Objectives
- B. Information sheet
- C. Assignment Sheet #1--Drug Action
- D. Test
- E. Answers to test

II. References:

A. Asperheim, Mary K. *Pharmacology for Practical Nurses.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1967.

B. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

C. Falconer, Mary W. et al. *The Drug, The Nurse, The Patient.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1974.

D. Squire, Jessie E. and Jean M. Welch. *Basic Pharmacology for Nurses.* St. Louis, Missouri: The C. V. Mosby Company, 1973.

E. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

III. Additional materials:

A. Films

1. "Drug Addiction." Oklahoma State Department of Health.

2. "Narcotics: Pit of Despair." Oklahoma State Department of Health.

B. Filmstrips

1. "Drug Dependency: Narcotic Analgesics." Trainex Corporation.

2. "Drug Dependency: Stimulants, Depressants, and Psychedelics." Trainex Corporation.

3. "Drug Dependency: Alcohol." Trainex Corporation.

EFFECTS OF DRUGS
UNIT VI

INFORMATION SHEET

I. Terms and definitions

   A. Addiction--Physiologic or psychologic dependence on some agent with a tendency to increase its use

   B. Habituation--Acquired tolerance from repeated use of a drug with little or no tendency to increase the dose

   C. Tolerance--Decrease of effect of a drug due to its continued administration

   D. Drug addiction--Acquired dependence upon narcotics or other drugs which stimulate or depress physiologic or mental activities; considered a disease

   E. Lethal dose--One which causes death

   F. Local effect--Effect limited to a part; not general

   G. Systemic effect--Generalized or affecting the entire body

   H. Injection--Introduction of a fluid substance into the body, usually by means of a syringe or other device connected to a hollow needle; the solution so administered

   I. Infusion--Slow injection of a solution into a vein or into tissue of the body

   J. Inunction--Ointment or medicated substance rubbed into the skin to secure a local or systemic effect

   K. Instillation--Introduction of a liquid into a body cavity

   L. Sublingual--Beneath the tongue

   M. Parenteral--Outside the alimentary canal, as a subcutaneous, intravenous, or intramuscular injection

   N. Intradermal--Within the skin

   O. Hypodermoclysis--Introduction of large quantities of fluid into the subcutaneous tissues

   P. Intraperitoneal--Within the peritoneum or peritoneal cavity

   Q. Intracardial--Within the heart

   R. Intrapleural--Within the pleura or pleural cavity

INFORMATION SHEET

S. Intraspinal--Within the spinal canal

T. Palatability--State of being pleasing to the taste

U. Anaphylaxis--Serious, generalized reaction brought about by the administration of an allergen such as a drug or serum; usually occurs rapidly and can be fatal unless immediate emergency measures are taken

II. General purposes for which drugs are given

A. Prevention or prophylaxis--To prevent the occurrence of a disease or to lessen its severity if it does occur

(NOTE: Use of drugs in prevention of disease is increasing and such use has nearly eliminated some diseases.)

B. Diagnosis--To aid physician in establishing an exact diagnosis

C. Therapeutics

1. Curative--To cure specific diseases
2. Palliative or symptomatic--To relieve symptoms; help patient feel better
3. Supportive--To sustain patient until natural resistance overcomes illness or until other measures can be instituted
4. Substitutive--To replace substances usually found in the body; may be temporary or permanent replacement
5. Restorative--To assist in the healing process

III. Patient factors which influence selection of medication

A. Age, sex, and weight

1. Adult dose is based upon the average weight of a man, one hundred fifty pounds
2. Alteration of this average adult dose may be necessary for all others

B. Physical condition

1. In severe illness, dosage may need to be increased
2. In certain conditions a particular drug may be contraindicated

Example: When a patient has respiratory difficulty, drugs which depress respirations should be avoided or given in reduced dosages

INFORMATION SHEET

C. Tolerance–When a drug is taken over a period of time, tolerance to its effect may develop, making increased dosage or change of medication necessary

D. Idiosyncrasy and hypersensitivity–Reactions to drugs may vary from mild with minimal discomfort to a severe or fatal reaction, anaphylaxis

E. Occupation–Physically active persons may require larger or more frequent doses of medications to attain the desired effect

IV. Drug factors which influence the selection of medication

A. Purpose of the drug–Influences amount, time, and method of administration

B. Nature and form of the drug–Physical and chemical properties of the drug determine method of administration

Example: Insulin, because of its chemical composition, is destroyed by digestive enzymes and must be given subcutaneously

C. Rate of absorption and excretion–Some drugs such as epinephrine are absorbed and excreted rapidly and have a fleeting effect; other drugs, such as digitalis, are excreted slowly and have a cumulative effect

D. Rate and amount of metabolism–Some drugs must be changed by the body into quite different substances to be effective; others are active when ingested

E. Excretion of the drug

1. Drugs may be eliminated by the kidneys, skin, lungs, alimentary canal, and the mucous membranes

2. When a particular excretory function is impaired, the physician avoids or gives smaller dosages of medications excreted by that system

F. Possibility of addiction–Addictive medications are used cautiously

G. Drug combinations and interactions–Drugs may increase or decrease the actions of each other

Example: Aspirin increases the effect of an anticoagulant; phenobarbital decreases the effect of some anticoagulants

V. Other factors which influence amount and effect of medication

A. Method of administration–Intravenous medication is most rapidly absorbed and therefore may be given in smaller dosages; rectal medications are absorbed slowly and usually require larger dosages

INFORMATION SHEET

B. Time of administration--Desired effect determines time of administration

1. Hypnotics are given at bedtime, usually; diuretics are given early in the day to avoid interrupting the patient's sleep with urinary frequency

2. Drugs given orally for systemic effect are absorbed more rapidly if given before meals when the stomach and upper intestines are empty

3. Sodium bicarbonate when given to neutralize an acid tendency in the body fluids is given between meals; if given after meals, it combines with hydrochloric acid and is absorbed as sodium chloride

C. Dosage of medication--Doses on different levels may have different effects

Example: Small doses of atropine slow the heart rate; larger doses increase the rate

VI. Administration for local effect

A. Skin

1. Inunctions

Example: Zinc oxide ointment for skin rashes

2. Poultices, plasters, or moist dressings

Example: Saline moist dressings for inflamed areas

3. Immersion of a part of the body

Example: Medicated baths for soothing rashes

4. Painting or spraying

Example: Tincture of Merthiolate for a cut or abrasion

B. Mucous membranes

1. Swabbing or painting

Example: Nystatin solution for moniliasis (thrush) in oral cavity

2. Inhalation

Example: Vapor inhalations for lung conditions

INFORMATION SHEET

3. Instillation

   Example: Flagyl vaginal inserts for Trichomonas vaginalis infection

4. Spraying

   Example: Neo-Synephrine nasal spray for rhinitis and sinusitis

5. Irrigation

   Example: Bladder irrigation with normal saline solution

6. Drops

   Example: Atropine ophthalmic solution to dilate the pupil of the eye

VII. Administration for general or systemic effect

A. Alimentary canal

1. Sublingual

   Example: Nitroglycerin for treatment of angina pectoris

   (NOTE: Angina pectoris is the severe pain radiating from the heart to the shoulder and left arm due to inadequate blood and oxygen supply to the heart.)

2. Oral

   (NOTE: This is the most common method of administration.)

3. Suppositories

   Example: Seconal rectal suppositories for sedation

B. Parenteral

1. Intradermal

   Example: Skin test for tuberculosis

2. Subcutaneous or hypodermic

   Example: Morphine for pain

3. Intramuscular

   Example: Penicillin for an infection

INFORMATION SHEET

4. Hypodermoclysis

   Example: Fluid, such as 1000 cc normal saline solution, to an elderly or extremely dehydrated person

5. Intraperitoneal

   Example: Administration of fluid to infants and small children

6. Intravenous

   Example: Fluid such as glucose or saline as part of postoperative treatment

7. Intracardial

   Example: Emergency administration of a heart stimulant

8. Intraspinal or spinal

   Example: Anesthesia for surgical procedures

VIII. Types of drug action

A. Depressant—Diminishes functional activity of the cells

B. Stimulant—Increases functional activity of the cells

C. Irritant—Stimulant which causes excessive cell activity; prolonged irritation depresses activity

D. Salt action—Changes internal pressure in body cells

E. Demulcent or emollient—Coats and protects the tissues

F. Selective—Systemic drug which affects a specific organ

G. Physiologic—Action of a drug on normal tissue

H. Therapeutic—Action of a drug on diseased tissue

I. Principal effect—Therapeutic action most desired

J. Side effect—Action of a drug other than the main effect for which the drug is given

K. Untoward—Harmful side effect

L. Idiosyncrasy—Unexpected effect produced by a drug

M. Toxicity—Poisonous effect either from a regular dose or an overdose

INFORMATION SHEET

N. Cumulative--Tendency to accumulate in the system due to slow excretion; may be desired or undesired

O. Antagonistic--Opposite or counteraction of one drug to another

P. Synergistic--Increase in potency or decrease of side effects due to the working together of two drugs

EFFECTS OF DRUGS
UNIT VI

ASSIGNMENT SHEET #1--DRUG ACTION

Using an official or standard drug reference textbook, look up one or more drugs assigned by the instructor. Determine the action of the drug, indications for giving it, any precautions or contraindications, adverse reactions, dosage, and method of administration.

EFFECTS OF DRUGS
UNIT VI

TEST

1. Match the terms on the right to the correct definition.

______a. Physiologic or psychologic dependence on some agent with a tendency to increase its use

______b. Acquired tolerance from repeated use of a drug with little or no tendency to increase the dose

______c. Acquired dependence upon narcotics or other drugs which stimulate or depress physiologic or mental activities; considered a disease

______d. One which causes death

______e. Decrease of effect of a drug due to its continued administration

______f. Ointment or medicated substance rubbed into the skin to secure a local or systemic effect

______g. Introduction of a liquid into a body cavity

______h. Beneath the tongue

______i. Outside the alimentary canal, as a subcutaneous, intravenous, or intramuscular injection

______j. Within the skin

______k. Introduction of large quantities of fluid into the subcutaneous tissues

______l. Within the peritoneum or peritoneal cavity

______m. Within the heart

______n. Within the pleura or pleural cavity

1. Intracardial
2. Intradermal
3. Anaphylaxis
4. Instillation
5. Intraperitoneal
6. Intraspinal
7. Parenteral
8. Addiction
9. Intrapleural
10. Palatability
11. Systemic effect
12. Sublingual
13. Infusion
14. Lethal dose
15. Tolerance
16. Drug addiction
17. Local effect
18. Inunction
19. Injection
20. Hypodermoclysis
21. Habituation

______o. Within the spinal canal

______p. State of being pleasing to the taste

______q. Serious, generalized reaction brought about by the administration of an allergen such as a drug or serum; usually occurs rapidly and can be fatal unless immediate emergency measures are taken

______r. Effect limited to a part; not general

______s. Generalized or affecting the entire body

______t. Introduction of a fluid substance into the body, usually by means of a syringe or other device connected to a hollow needle; the solution so administered

______u. Slow injection of a solution into a vein or into tissue of the body

2. Discuss the three general purposes for which drugs are given.

   a. Diagnosis--

   b. Prevention or prophylaxis--

   c. Therapeutics

      1. Substitutive--

      2. Palliative or symptomatic--

      3. Supportive--

      4. Curative--

      5. Restorative--

3. Tell how the following patient factors may influence the selection of medication.

   a. Age, sex, and weight

b. Physical condition

c. Tolerance

d. Idiosyncrasy and hypersensitivity

e. Occupation

4. Tell how the following drug factors may influence the selection of medication.
    a. Purpose of the drug
    b. Nature and form of the drug
    c. Rate of absorption and excretion
    d. Rate and amount of metabolism
    e. Excretion of the drug
    f. Possibility and addiction
    g. Drug combinations and interactions

5. Tell how the factors listed below may influence selection of medication.
    a. Method of administration

    b. Time of administration

c. Dosage of medication

6. List methods of administration for local effect.

   a. Skin

      1)

      2)

      3)

   b. Mucous membranes

      1)

      2)

      3)

      4)

7. List methods of administration for general or systemic effect.

   a. Alimentary canal

      1)

      2)

   b. Parenteral

      1)

      2)

      3)

      4)

      5)

8. Match the types of drug action on the right to the correct description.

______a. Increase in potency or decrease of side effects due to the working together of two drugs

______b. Opposite or counteraction of one drug to another

______c. Tendency to accumulate in the system due to slow excretion; may be desired or undesired

______d. Poisonous effect either from a regular dose or an overdose

______e. Unexpected effect produced by a drug

______f. Harmful side effect

______g. Action of a drug on diseased tissue

______h. Diminishes functional activity of the cells

______i. Action of a drug other than the main effect for which the drug is given

______j. Systemic drug which affects a specific organ

______k. Increases functional activity of the cells

______l. Changes internal pressure in body cells

______m. Therapeutic action most desired

______n. Coats and protects the tissues

______o. Action of a drug on normal tissue

______p. Stimulant which causes excessive cell activity; prolonged irritation depresses activity

1. Stimulant
2. Irritant
3. Salt action
4. Therapeutic
5. Synergistic
6. Cumulative
7. Demulcent or emollient
8. Selective
9. Untoward
10. Physiologic
11. Idiosyncrasy
12. Depressant
13. Toxicity
14. Principal effect
15. Side effect
16. Antagonistic

9. Demonstrate the ability to use a drug reference textbook.

(NOTE: If this has not been accomplished prior to the test, ask the instructor when the above activity should be completed.)

EFFECTS OF DRUGS
UNIT VI

ANSWERS TO TEST

1. a. 8
   b. 21
   c. 16
   d. 14
   e. 15
   f. 18
   g. 4
   h. 12
   i. 7
   j. 2
   k. 20
   l. 5
   m. 1
   n. 9
   o. 6
   p. 10
   q. 3
   r. 17
   s. 11
   t. 19
   u. 13

2. Discussion should include:

   a. Diagnosis--To aid physician in establishing an exact diagnosis

   b. Prevention or prophylaxis--To prevent the occurrence of a disease or to lessen its severity if it does occur

   c. Therapeutics

      1) To replace substances usually found in the body; may be temporary or permanent replacement

      2) To relieve symptoms; help patient feel better

      3) To sustain patient until natural resistance overcomes illness or until other measures can be instituted

      4) To cure specific diseases

      5) To assist in the healing process

3. Answer should include:

   a. Age, sex, and weight

      1. Adult dose is based upon the average weight of a man, one hundred fifty pounds

      2. Alteration of this average adult dose may be necessary for all others

   b. Physical condition

      1. In severe illness, dosage may need to be increased

      2. In certain conditions a particular drug may be contraindicated

c. Tolerance--When a drug is taken over a period of time, tolerance to its effect may develop, making increased dosage or change of medication necessary

d. Idiosyncrasy and hypersensitivity--Reactions to drugs may vary from mild with minimal discomfort to a severe or fatal reaction, anaphylaxis

e. Occupation--Physically active persons may require larger or more frequent doses of medications to attain the desired effect

4. Answer should include:

a. Purpose of the drug--Influences amount, time, and method of administration

b. Nature and form of the drug--Physical and chemical properties of the drug determine method of administration

c. Rate of absorption and excretion--Some drugs such as epinephrine are absorbed and excreted rapidly and have a fleeting effect; other drugs, such as digitalis, are excreted slowly and have a cumulative effect

d. Rate and amount of metabolism--Some drugs must be changed by the body into quite different substances to be effective; others are active when ingested

e. Excretion of the drug

1. Drugs may be eliminated by the kidneys, skin, lungs, alimentary canal, and the mucous membranes

2. When a particular excretory function is impaired, the physician avoids or gives smaller dosages of medications excreted by that system

f. Possibility of addiction--Addictive medications are used cautiously

g. Drug combinations and interactions--Drugs may increase or decrease the actions of each other

5. Answer should include:

a. Method of administration--Intravenous medication is most rapidly absorbed and therefore may be given in smaller dosages; rectal medications are absorbed slowly and usually require larger dosages

b. Time of administration--Desired effect determines time of administration

1) Hypnotics are given at bedtime, usually; diuretics are given early in the day to avoid interrupting the patient's sleep with urinary frequency

2) Drugs given orally for systemic effect are absorbed more rapidly if given before meals when the stomach and upper intestines are empty

3) Sodium bicarbonate when given to neutralize an acid tendency in the body fluids is given between meals; if given after meals, it combines with hydrochloric acid and is absorbed as sodium chloride

c. Dosage of medication--Doses on different levels may have different effects

6. a. Skin

Any three of the following:

1) Inunctions

2) Poultices, plasters, or moist dressings

3) Immersion of a part of the body

4) Painting or spraying

b. Mucous membranes

Any four of the following:

1) Swabbing or painting
2) Inhalation
3) Instillation
4) Spraying
5) Irrigation
6) Drops

7. a. Alimentary canal

Any two of the following:

1) Sublingual
2) Oral
3) Suppositories

b. Parenteral

Any five of the following:

1) Intradermal
2) Subcutaneous or hypodermic

3) Intramuscular
4) Hypodermoclysis
5) Intraperitoneal
6) Intravenous
7) Intracardial
8) Intraspinal or spinal

8. a. 5
b. 16
c. 6
d. 13
e. 11
f. 9
g. 4
h. 12
i. 15
j. 8
k. 1
l. 3
m. 14
n. 7
o. 10
p. 2

9. Evaluated to the satisfaction of the instructor.

ADMINISTRATION OF MEDICATIONS
UNIT VII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list items of information on a prescription, list rules and safety measures in administering medication, and discuss medicine orders and the doctor's order sheet. The student should be able to demonstrate the ability to use a medicine glass accurately and prepare medications for administration orally. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Discuss medicine orders.
2. List five items the prescription must include.
3. List the graduations or measurements usually found on a medicine glass.
4. Describe the meniscus and the way it affects measurement of liquid medication.
5. List the five "rights" of administering medications.
6. List seven helpful rules in preparing medications for administration.
7. List ten safety measures to observe in giving medications.
8. Discuss the doctor's order sheet.
9. List five items that should be entered on a medicine card.
10. Demonstrate the ability to:
    a. Post medications.
    b. Read a medicine glass.
    c. Prepare, administer, and chart medications.

ADMINISTRATION OF MEDICATIONS
UNIT VII

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information and assignment sheets.

  C. Obtain Doctor's Order Sheet, prescription blanks, medication sheet and medicine cards if the ones used in your institution are different from those given in this unit.

  D. Provide a medicine glass for each student and the teacher for use with Assignment Sheet #1; provide colored liquid for same sheet.

  E. Provide medications for use with Job Sheet #2.

  F. Discuss terminal and specific objectives.

  G. Discuss information and assignment sheets.

  H. Demonstrate and discuss procedures outlined on the job sheets.

  I. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Demonstrate the ability to accomplish the procedures outlined on the job sheet.

  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

C. Transparency masters

1. TM 1--Medicine Glass
2. TM 2--The Meniscus
3. TM 3--Transferring Tablets
4. TM 4--Preparation of Medication
5. TM 5--Make Positive Patient Identification

D. Assignment Sheet #1--Post Medications

E. Job sheets

1. Job Sheet #1--Read the Medicine Glass
2. Job Sheet #2--Prepare, Administer, and Chart Medications

F. Test

G. Answers to test

II. References:

A. Falconer, Mary W. et al. *Fundamentals of Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1974.

B. Squire, Jessie E. and Jean M. Welch. *Basic Pharmacology for Nurses.* St. Louis, Missouri: The C. V. Mosby Company, 1973.

III. Films:

A. "An Ounce of Prevention." Merrell National Film Library, 1269 Gest Street, Cincinnati, Ohio 45203.

B. "No Margin for Error." Merrell National Film Library.

ADMINISTRATION OF MEDICATIONS
UNIT VII

INFORMATION SHEET

I. Medicine orders

   A. Name of medicine, amount to be given, and time and frequency of dosage must be stated

   B. All medication orders must be signed by the physician; in an extreme emergency a medication order can be taken and carried out by a nurse, but it must be signed by the doctor as soon as possible or as directed by institutional policy

   C. If there is any doubt concerning a medication order, the charge nurse and/or the physician must be consulted

   D. When an order is discontinued, the charge nurse destroys the medication or treatment posting according to institutional procedure

   E. No nurse can change or alter a physician's order in any way

   F. If the nurse carries out an incorrect order, she is responsible, along with the person in charge and the physician

II. Items the prescription must include

   (NOTE: An example of a prescription blank is shown on the following page.)

   A. Patient's name and address and the date

   B. Names and quantities of ingredients

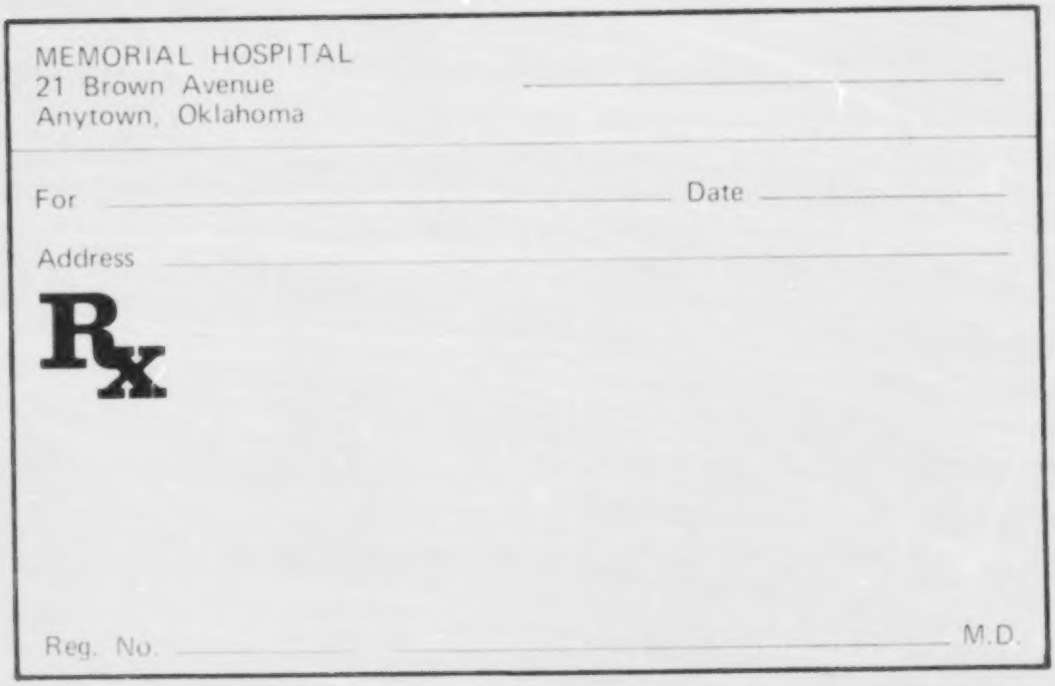
   C. Directions to the pharmacist

   D. Directions to the patient

   E. Signature, address, and registry number of physician

      (NOTE: The registry number is an official number issued by the state medical association to physicians permitted to prescribe narcotics.)

INFORMATION SHEET



MEMORIAL HOSPITAL
21 Brown Avenue
Anytown, Oklahoma

For ______________________ Date ____________

Address ______________________________________

Rx

Reg. No. ____________ ______________________ M.D.

III. Graduations or measurements usually found on the medicine glass (Transparency 1)

   A. Teaspoon

   B. Dessertspoon

   C. Tablespoon

   D. Ounce

   E. Milliliter (ml) or cubic centimeter (cc)

   F. Dram

IV. Meniscus (Transparency 2)

   A. When liquids are poured into a measuring device such as a medicine glass, surface tension causes the portion of the liquid touching the glass to pull up, forming a concave surface called the meniscus

   (NOTE: *Concave* means rounded inward, as the inside of a bowl.)

   B. For accuracy, the reading of the amount of liquid must be made at the lowest point of the meniscus when the glass is held at eye level

INFORMATION SHEET

V. Five "rights" of administering medications

  A. Right patient

  B. Right medication

  C. Right amount

  D. Right method

  E. Right time

VI. Helpful rules in preparing medications for administration

  A. Concentrate on the task at hand, preparing medications

  B. Avoid handling medications with your fingers; pour tablets or capsules into lid of medicine bottle so extras can be returned to the bottle (Transparency 3)

  C. Shake liquid medicines, if needed, before measuring

  D. Pour from the side opposite the label to avoid soiling it

  E. Hold medicine glass straight and at eye level when measuring liquids

  F. Place thumbnail on the medicine glass to mark the correct dose

  G. Wipe the neck of the bottle after pouring a liquid medication, if necessary

  H. May dilute most liquid medications; do not dilute cough syrup

  I. Use special measuring devices as needed

  Example: A minim should be measured with a dropper or measuring device calibrated in minims.

VII. Safety measures to observe in giving medications

  A. Follow policies and directives of the institution

  B. Give only the medications which you prepare

  C. Always read medication label three times (Transparency 4)

    1. Before taking container from the shelf

    2. Before pouring; check label with the medication card

    3. When returning the container to the shelf

INFORMATION SHEET

D. Never use an unlabeled bottle

(NOTE: If the label is soiled or otherwise difficult to read, return to pharmacy to be relabeled.)

E. Give only medications for which there is a written order

F. Ask the charge nurse about the medication posting if uncertain about any part of it

G. Know why the medicine is given and its maximum dose

H. Know the reactions or adverse symptoms of medications

I. Do not return medicine to a container after pouring it

(NOTE: An exception to this rule is the prepackaged dose which may be returned to the container.)

J. Do not combine two partially filled containers of like medication

K. Keep medications and medicine cards together until the medication is given

L. Make positive patient identification before giving any medication

M. Do not leave medication at a patient's bedside; stay with the patient until the medicine is taken

N. Keep the medication tray or cart in sight at all times while administering medications

O. Make accurate and exact measurements of medications

P. Equivalent measurements must be memorized so the nurse can read the medicine glass quickly and accurately

INFORMATION SHEET

VIII. Doctor's order sheet

A. Becomes part of the patient's permanent record

B. Medication orders are written and signed by the doctor

C. Physicians' orders may be transcribed onto the Kardex and medicine cards by a clerical employee, but all orders must be noted by a licensed person who is held accountable

NAME Smith, JOHN PHYSICIAN PAGE ROOM 401

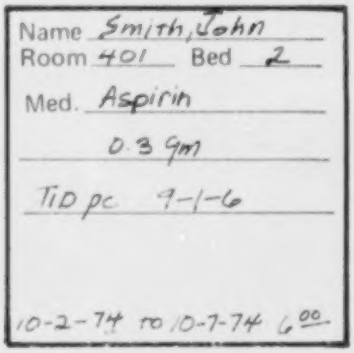
DATE	DOCTOR'S ORDERS
2-10-75	1) Aspirin 0.3 gm. TID PC 2) Milk of Magnesia ℥, HS 3) Furadantin 50 mg TID PC 4) Regular diet 5) Consultation with physiotherapy Charles Page, M.D.
2-14-75	1) DC Furadantin 2) Aspirin 0.3 gm. TID PC 3) Ambulate with assistance Charles Page, M.D.

INFORMATION SHEET

IX. Information necessary for medicine cards

- A. Patient's name
- B. Room number and bed number
- C. Name of medication
- D. Dosage
- E. Time or times medication is given

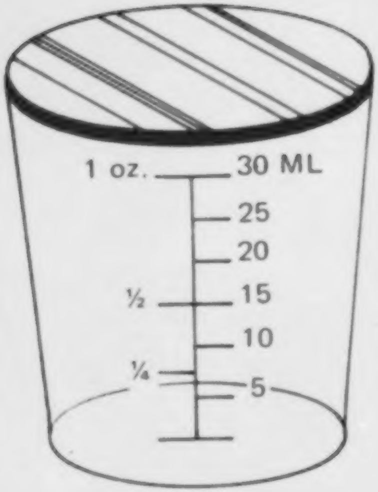
(NOTE: Initial date and discontinuing date and time may also be included.)



Name Smith, John
Room 401 Bed 2
Med. Aspirin
0.3 gm
TID pc 9-1-6

10-2-74 to 10-7-74 6^{00}

Medicine Glass


1 oz.
30 ML
25
20
½
15
10
¼
5

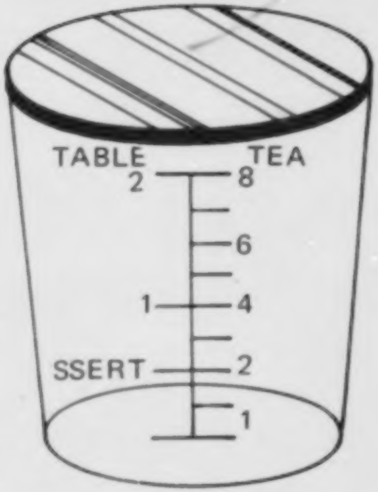
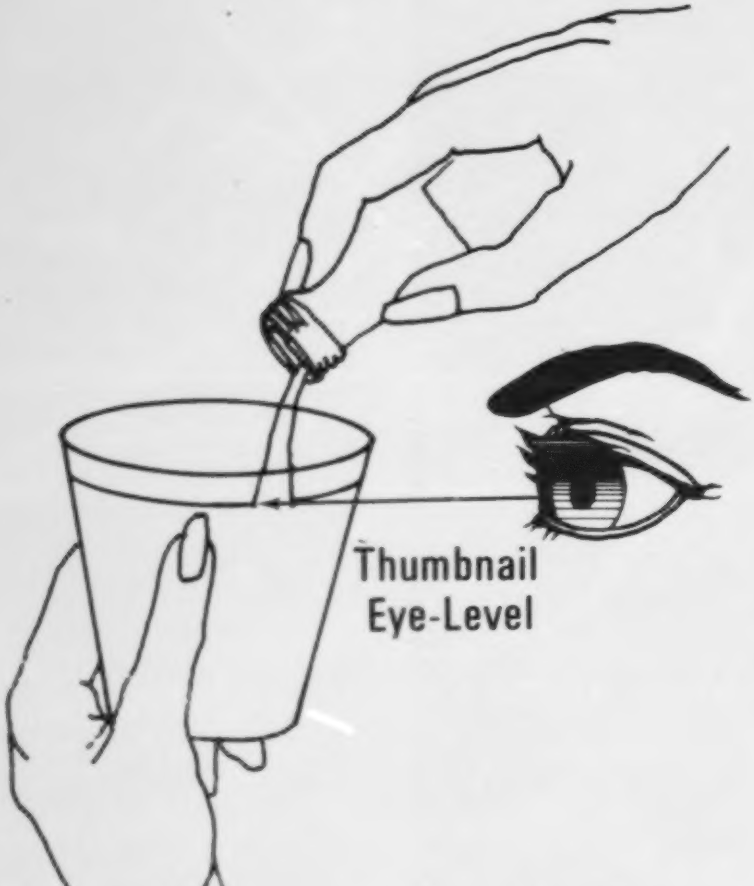
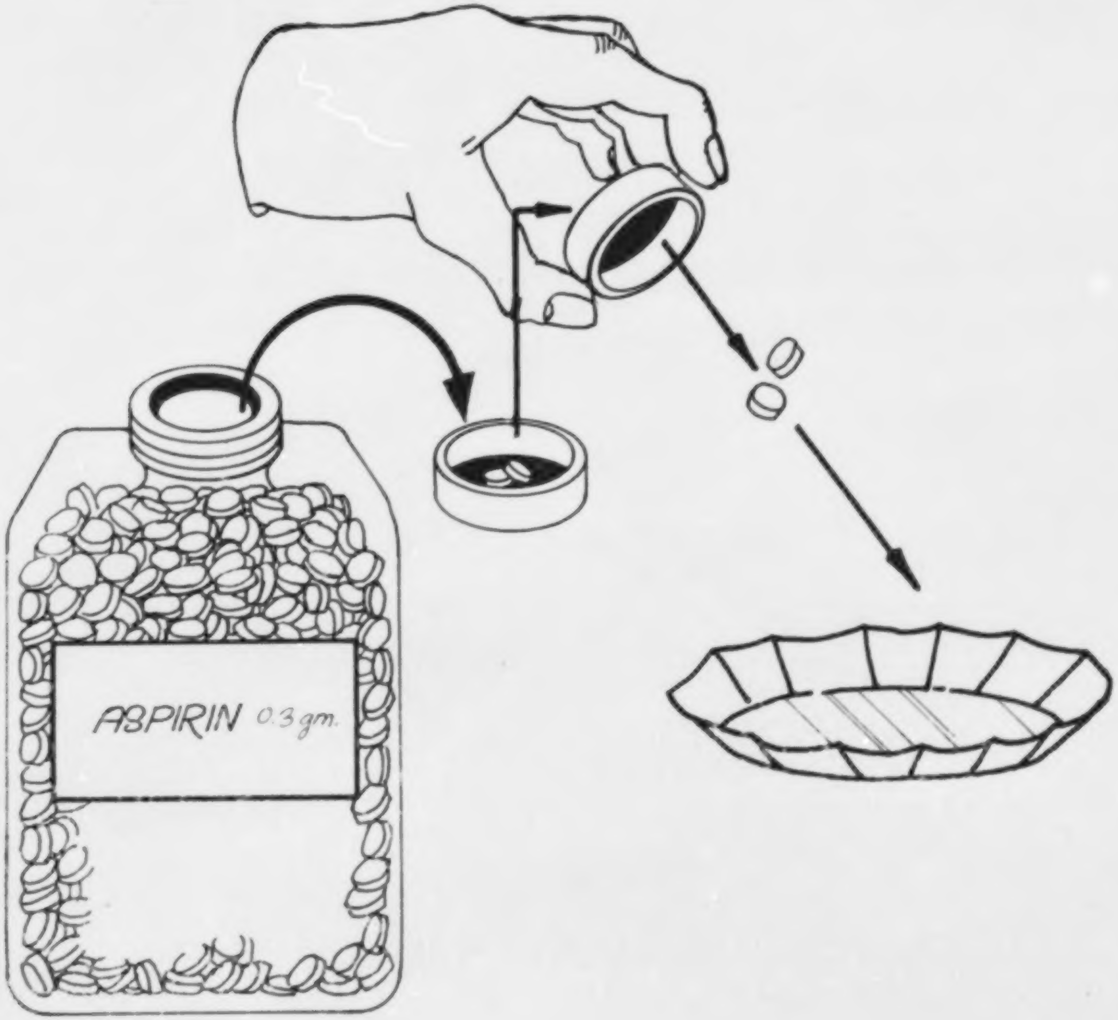


TABLE
2
TEA
8
6
1
4
SSERT
2
1

The Meniscus


Thumbnail
Eye-Level

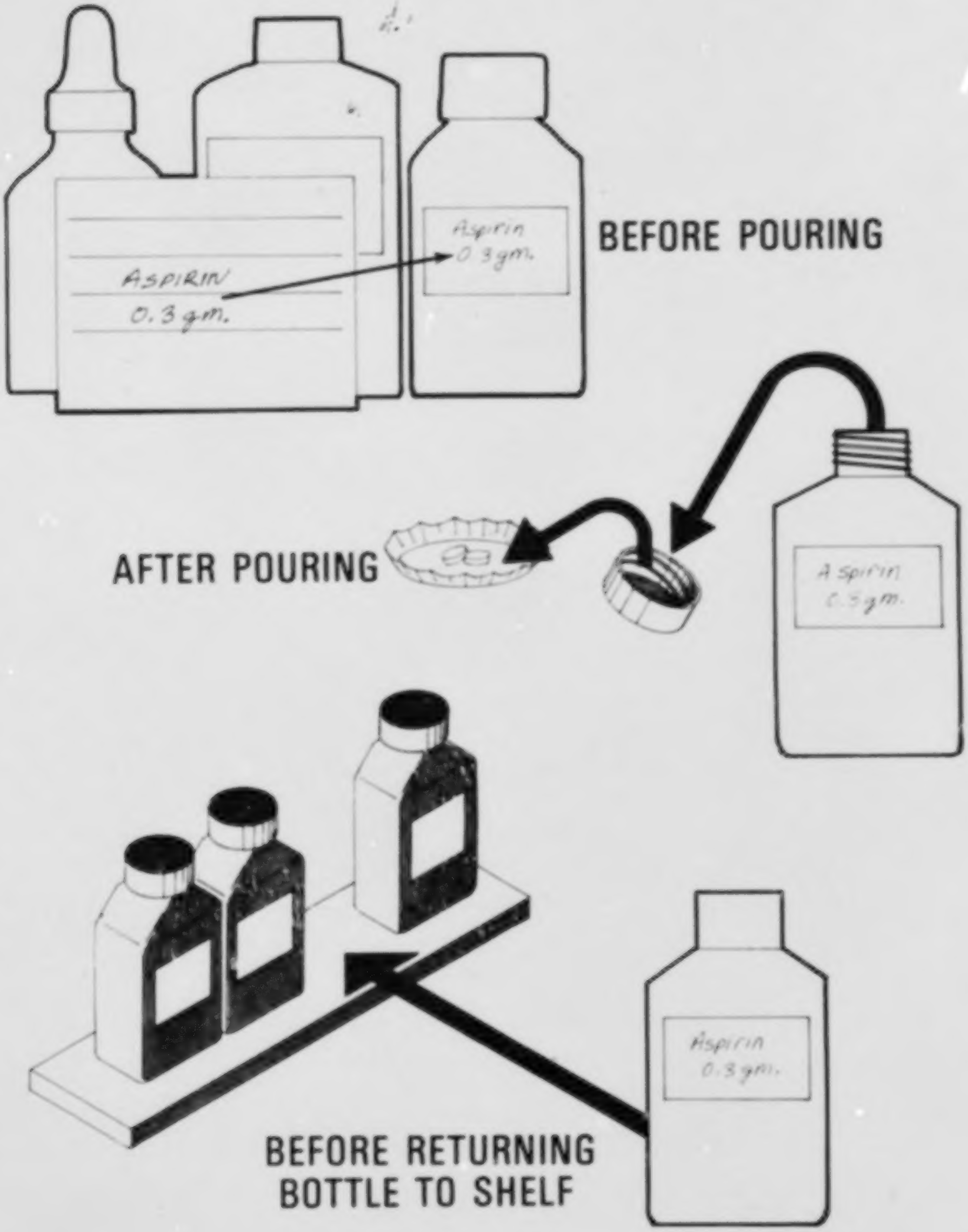
Transferring Tablets


ASPIRIN 0.3 gm.

TM 3

N II - 189-A

Preparation Of Medication

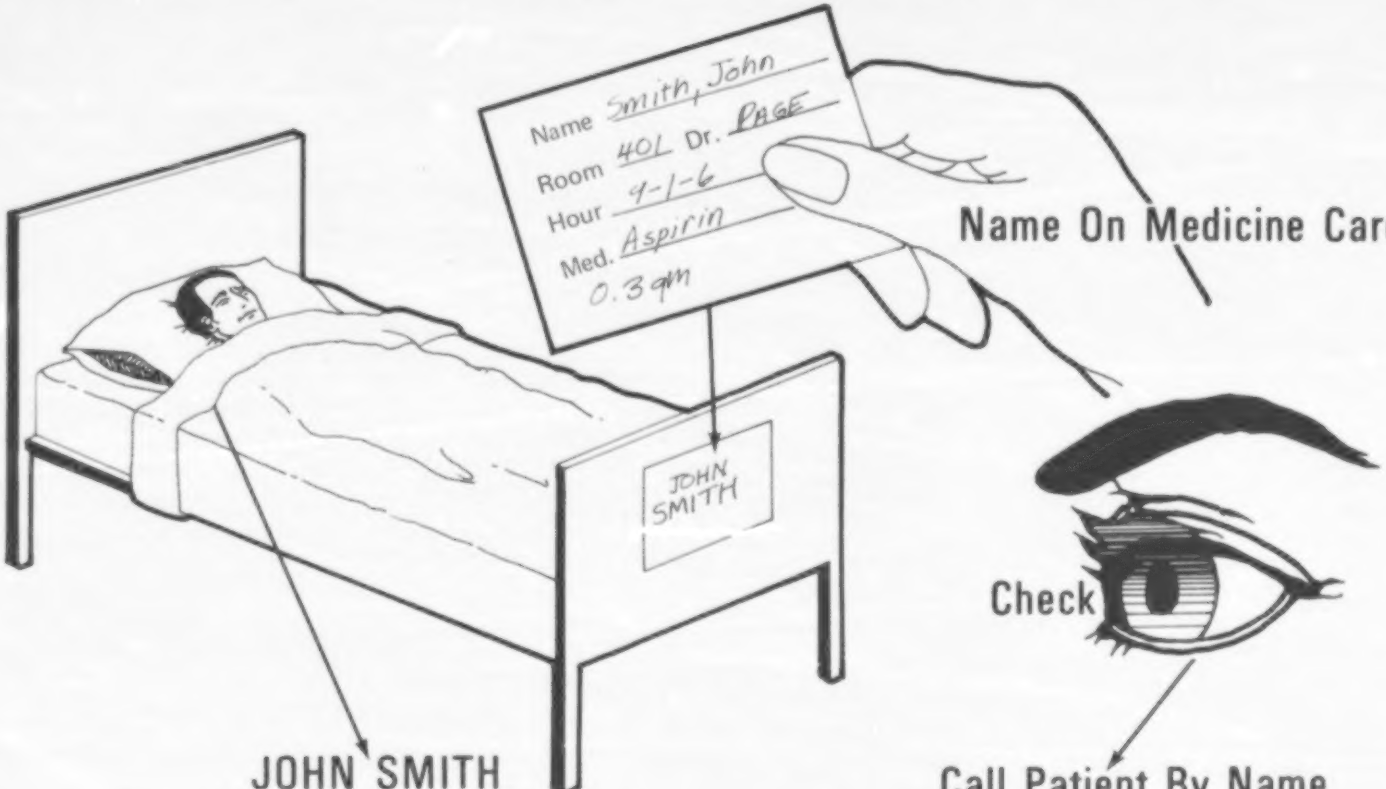

ASPIRIN
0.3 gm.
Aspirin
0.3 gm.
A spirin
0.3 gm.
Aspirin
0.3 gm.

BEFORE POURING

AFTER POURING

BEFORE RETURNING BOTTLE TO SHELF

Make Positive Patient Identification


Name Smith, John
Room 40L Dr. PAGE
Hour 9-1-6
Med. Aspirin
0.3 gm
JOHN SMITH

Name On Medicine Card

Check

JOHN SMITH
Check Identification Bracelet

Call Patient By Name

Secure Acknowledgement

ADMINISTRATION OF MEDICATIONS
UNIT VII

ASSIGNMENT SHEET #1--POST MEDICATIONS

Post the following doctor's orders on the medication cards provided.

1. Mrs. Sally Amos Room 104-1
    - a. Empirin Compound one tablet three times a day
    - b. Digoxin 0.25 mg daily
    - c. Milk of Magnesia 1/2 ounce at bedtime

    Adam Scarf, MD

2. Mary Hawthorne Room 102
    - a. Feosol tabs one tid
    - b. Equanil 100 mg HS
    - c. Aspirin gr x q̄4h prn

    Paul Martin, MD

3. Jerry Robinson Room 103
    - a. Keflex 250 mg q̄6h
    - b. Orinase 500 mg q̄ a.m.

    William Dean, MD

4. Gerald Payne Room 101
    - a. Ilosone Chewable 125 mg two times a day
    - b. Elixir terpin hydrate ʒi q̄4h

    Henry Clark, MD

N II - 197-A

ASSIGNMENT SHEET #1

Name ____________
Room ________ Bed ______
Med. ____________

Name ____________
Room ________ Bed ______
Med. ____________

Name ____________
Room ________ Bed ______
Med. ____________

Name ____________
Room ________ Bed ______
Med. ____________

Name ____________
Room ________ Bed ______
Med. ____________

Name ____________
Room ________ Bed ______
Med. ____________

Name ____________
Room ________ Bed ______
Med. ____________

Name ____________
Room ________ Bed ______
Med. ____________

Name ____________
Room ________ Bed ______
Med. ____________

Name ____________
Room ________ Bed ______
Med. ____________

ADMINISTRATION OF MEDICATIONS
UNIT VII

JOB SHEET #1--READ THE MEDICINE GLASS

I. Equipment

   A. Medicine glass

   B. Colored liquid

II. Procedure--Examine medicine glass for markings

   A. Find ML or CC marking

   B. Place thumbnail at 5 ML mark

   C. Turn glass to find TEA (teaspoon)

   D. Place thumbnail at 1 teaspoon mark

   E. Note that 5 ML and 1 TEA are at the same level

   F. Place thumbnail at 2 teaspoon mark

   G. Note that the milliliter equivalent is slightly under 10 ML

   H. Locate OZ measurement

   I. Place thumbnail on 1/2 ounce line

   J. Note that ½ OZ is the same as 15 ML

   K. Place thumbnail on 1 ounce line

   L. Note that 30 ML is the same as 1 OZ

   M. Find the following measurements: 10 ML, 20 ML, 25 ML, 30 ML

   N. Find the following measurements: ¼ OZ, ½ OZ, ¾ OZ, 1 OZ

   O. Find TABLE (tablespoon) mark

   P. Place thumbnail on 2 tablespoon mark

   Q. Turn glass until TEA (teaspoon) mark appears; how many teaspoons make 2 tablespoons? How many teaspoons make 1 tablespoon?

   R. Pour 2 teaspoons of water in medicine glass

   S. Hold medicine glass at eye level to find meniscus

   (NOTE: The reading of the dose of liquid medicine is always made at the lowest point of the curve of the meniscus.)

ADMINISTRATION OF MEDICATIONS
UNIT VII

JOB SHEET #2-PREPARE, ADMINISTER, AND CHART MEDICATIONS

I. Equipment

  A. Medicine cards prepared for Assignment Sheet #1

  B. Medicine cups and glasses

  C. Medicine tray or cart

  D. Bottles of medicine

  E. Medication sheet for charting

II. Procedure

  A. Wash hands

  B. Arrange medicine cards on tray

    1. Separate medication cards according to time of administration

    2. Place all cards for one patient together; have separate cups or glasses as needed for dry and liquid medications

    3. Arrange cards in order according to location of patients

  C. Pour medications as indicated by medicine cards

    1. Remember to pour liquids from the side of the bottle opposite the label; wipe mouth of bottle as needed

    2. Pour required amount of tablets or capsules into cap and then into medicine cup

    3. Read medicine labels three times

      a. Before removing bottle from cupboard

      b. Before pouring medication

      c. After pouring medication

    4. Place medication with card on tray

JOB SHEET #2

D. Administer medicines

   1. Identify patient; check medicine card with patient's identification band

   2. Prepare patient

   3. Give medication to patient; stay until assured medication has been taken

E. Provide for patient's comfort

F. Clean and prepare tray for next use

G. Return to proper place

H. Chart medications

I. Return cards to proper place

ADMINISTRATION OF MEDICATIONS
UNIT VII

TEST

1. Discuss medicine orders.

2. List five items the prescription must include.

   a.

   b.

   c.

   d.

   e.

3. List the graduations or measurements usually found on a medicine glass.

   a.

   b.

   c.

   d.

   e.

4. Describe the meniscus and the way it affects measurement of liquid medication.

5. List the five "rights" of administering medications.
   a.
   b.
   c.
   d.
   e.

6. List seven helpful rules in preparing medications for administration.
   a.
   b.
   c.
   d.
   e.
   f.
   g.

7. List ten safety measures to observe in giving medications.
   a.
   b.
   c.
   d.
   e.
   f.
   g.
   h.
   i.
   j.

8. Discuss the doctor's order sheet.

9. List five items that should be entered on a medicine card.

   a.

   b.

   c.

   d.

   e.

10. Demonstrate the ability to:

    a. Post medications.

    b. Read a medicine glass.

    c. Prepare, administer, and chart medications.

    (NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

ADMINISTRATION OF MEDICATIONS
UNIT VII

ANSWERS TO TEST

1. Discussion should include:

    a. Name of medicine, amount to be given, and time and frequency of dosage must be stated

    b. All medication orders must be signed by the physician; in an extreme emergency a medication order can be taken and carried out by a nurse, but it must be signed by the doctor as soon as possible or as directed by institutional policy

    c. If there is any doubt concerning a medication order, the charge nurse and/or the physician must be consulted

    d. When an order is discontinued, the charge nurse destroys the medication or treatment posting according to institutional procedure

    e. No nurse can change or alter a physician's order in any way

    f. If the nurse carries out an incorrect order, she is responsible, along with the person in charge and the physician

2. a. Patient's name and address and the date

    b. Names and quantities of ingredients

    c. Directions to the pharmacist

    d. Directions to the patient

    e. Signature, address, and registry number of physician

3. a. Teaspoon

    b. Dessertspoon

    c. Tablespoon

    d. Ounce

    e. Milliliter (ml) or cubic centimeter (cc)

    f. Dram

4. Description should include:

    a. When liquids are poured into a measuring device such as a medicine glass, surface tension causes the portion of the liquid touching the glass to pull up, forming a concave surface called the meniscus

   b. For accuracy, the reading of the amount of liquid must be made at the lowest point of the meniscus when the glass is held at eye level

5. a. Right patient

   b. Right medication

   c. Right amount

   d. Right method

   e. Right time

6. Any seven of the following:

   a. Concentrate on the task at hand, preparing medications

   b. Avoid handling medications with your fingers; pour tablets or capsules into lid of medicine bottle so extras can be returned to the bottle

   c. Shake liquid medicines, if needed, before measuring

   d. Pour from the side opposite the label to avoid soiling it

   e. Hold medicine glass straight and at eye level when measuring liquids

   f. Place thumbnail on the medicine glass to mark the correct dose

   g. Wipe the neck of the bottle after pouring a liquid medication, if necessary

   h. May dilute most liquid medications; do not dilute cough syrup

   i. Use special measuring devices as needed

7. Any ten of the following:

   a. Follow policies and directives of the institution

   b. Give only the medications which you prepare

   c. Always read medication label three times

      1) Before taking container from the shelf

      2) Before pouring; check label with the medication card

      3) When returning the container to the shelf

   d. Never use an unlabeled bottle
   e. Give only medications for which there is a written order
   f. Ask the charge nurse about the medication posting if uncertain about any part of it
   g. Know why the medicine is given and its maximum dose
   h. Know the reactions or adverse symptoms of medications
   i. Do not return medicine to a container after pouring it
   j. Do not combine two partially filled containers of like medication
   k. Keep medications and medicine cards together until the medication is given
   l. Make positive patient identification before giving any medication
   m. Do not leave medication at a patient's bedside; stay with the patient until the medicine is taken
   n. Keep the medication tray or cart in sight at all times while administering medications
   o. Make accurate and exact measurements of medications
   p. Equivalent measurements must be memorized so the nurse can read the medicine glass quickly and accurately

8. Discussion should include:
   a. Becomes part of the patient's permanent record
   b. Medication orders are written and signed by the doctor
   c. Physician's orders may be transcribed onto the Kardex and medicine cards by a clerical employee, but all orders must be noted by a licensed person who is held accountable
   d. Separate medicine card is filled out for each medication ordered by the physician

9. a. Patient's name
   b. Room number and bed number
   c. Name of medication
   d. Dosage
   e. Time or times medication is given

10. Performance skills will be evaluated to the satisfaction of the instructor.

SYRINGES AND NEEDLES
UNIT VIII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to identify the parts of a syringe and name kinds of syringes. The student should be able to list factors which affect selection of syringes, discuss care of syringes, and demonstrate the ability to use syringes. This knowledge will be evidenced by demonstration and a score of eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with syringes and needles to the correct definitions.
2. Name four kinds of syringes used for injections.
3. Label the components of a syringe on a diagram.
4. State the ranges of size and length of needles used for injections.
5. List four factors which affect the selection of syringes and needles.
6. Discuss the care and cleaning of syringes and needles.
7. Demonstrate the ability to:
   a. Use a syringe.
   b. Prepare an injection from a vial and an ampule.
   c. Prepare an injection from a tablet.

SYRINGES AND NEEDLES
UNIT VIII

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and job sheets.

   C. Make transparencies.

   D. Discuss terminal and specific objectives.

   E. Discuss information sheet.

   F. Provide a variety of syringes and needles for students to observe and compare.

   G. Provide one syringe and needle for each student and vials, ampules, and tablets as needed for job sheets.

   H. Demonstrate and discuss the procedures outlined in the job sheets.

   I. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Demonstrate the ability to accomplish the procedures outlined in the job sheets.

   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

C. Transparency masters

1. TM 1--Kinds of Syringes

2. TM 2--Components of a Syringe

3. TM 3--Needles

4. TM 4--Syringe Parts to be Kept Sterile

D. Job sheets

1. Job Sheet #1--Use a Syringe

2. Job Sheet #2--Prepare an Injection From a Vial and an Ampule

3. Job Sheet #3--Prepare an Injection From a Tablet

E. Test

F. Answers to test

II. References:

A. Dison, Norma. *An Atlas of Nursing Techniques.* St. Louis, Missouri: The C.V. Mosby Company, 1967.

B. Shelley, Esther G. *Medications and Mathematics for the Nurse.* Albany, New York: Delmar Publishers, 1972.

C. Squire, Jessie E. and Jean M. Welch. *Basic Pharmacology for Nurses.* St. Louis, Missouri: The C.V. Mosby Company, 1973.

III. Filmstrip--"Subcutaneous and Intramuscular Injections." Trainex Corporation.

SYRINGES AND NEEDLES
UNIT VIII

INFORMATION SHEET

I. Terms and definitions

   A. Barrel–Outer cylinder of a syringe

   B. Plunger–Sliding inner portion of a syringe

   C. Gauge–Diameter of an injection needle

   D. Bevel–Angle of a surface; the angle of the point of an injection needle

   E. Lumen–Space or channel through a needle

II. Kinds of syringes used for injections (Transparency 1)

(NOTE: These may be made of glass or plastic. Glass syringes are reuseable; plastic syringes are disposable.)

   A. Standard

   (NOTE: The size varies from 2 1/2 cc to 50 cc, according to use.)

   B. Insulin

   (NOTE: Calibrations correspond to the unit strength of insulin. The syringe used in giving insulin must be marked to correlate with the strength of insulin being used.)

   C. Tuberculin

   (NOTE: These syringes are used to administer doses of less than one cc. It is commonly used to measure tuberculin and antigens for allergies.)

   D. Cartridge

   (NOTE: These metal, reuseable syringes are fitted with prepared cartridges with attached needle. Cartridge with needle is used once and discarded.)

III. Components of a syringe (Transparency 2)

   A. Barrel

      1. Tip or hub

      2. Scales or calibrations

   B. Plunger

INFORMATION SHEET

IV. Needles (Transparency 3)

A. Size or gauge

1. Ranges from 16 to 27

2. Smaller sized needles have the larger numbers

Example: Size 25 is a smaller gauge than size 18

B. Length--Ranges from one-half to two inches

(NOTE: Shorter needles of smaller gauge are used to give intradermal and/or hypodermic subcutaneous injections. Longer needles with larger gauge are used for intramuscular injections and intravenous and hypodermoclysis infusions.)

V. Factors affecting selection of syringes and needles

A. Type of medication

B. Route of administration

C. Age, size, and physical condition of the patient

D. Amount of medication

VI. Care and cleaning of syringes and needles

A. The needle and portions of the syringe must be kept sterile at all times (Transparency 4)

B. Use syringes carefully to avoid waste and/or breakage

C. Protect needle points to keep them sharp

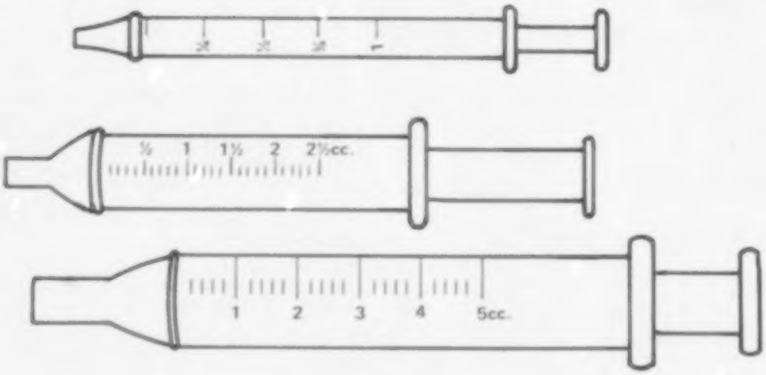
D. Rinse reuseable needles and syringes with water as soon as possible after use

E. Separate parts of the syringe and remove needle after rinsing

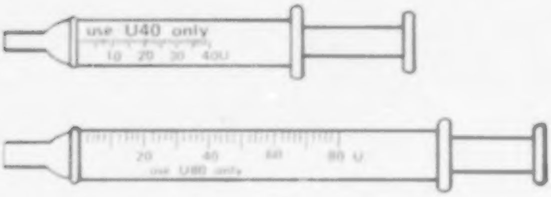
F. Discard disposable equipment in a safe manner

(NOTE: Sterile, prepackaged, disposable syringes and needles are used much of the time. However, reuseable equipment is still used to a limited degree and it may be necessary for the nurse to use and care for them properly.)

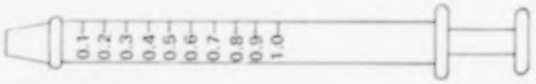
Kinds of Syringes


¼ ½ ¾ 1
½ 1 1½ 2 2½cc.
1 2 3 4 5cc.

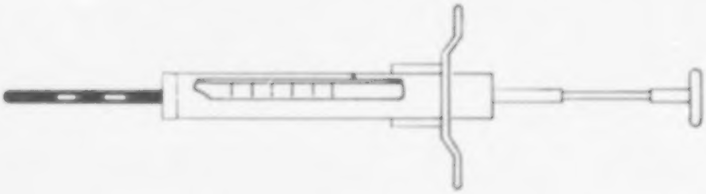
Standard


use U40 only
10 20 30 40U
20 40 60 80 U
use U80 only

Insulin

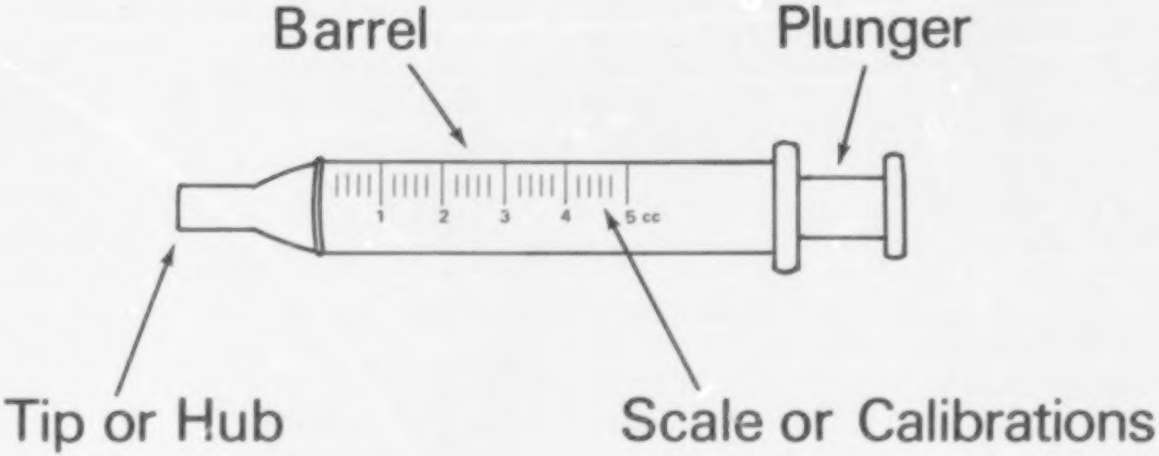

0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0

Tuberculin

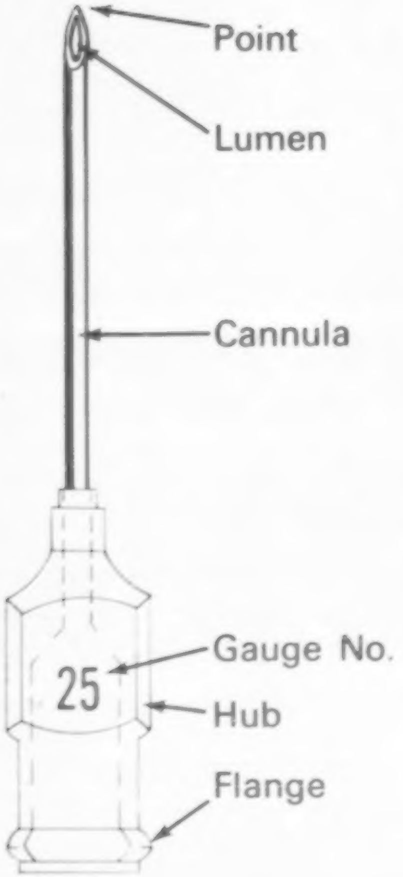


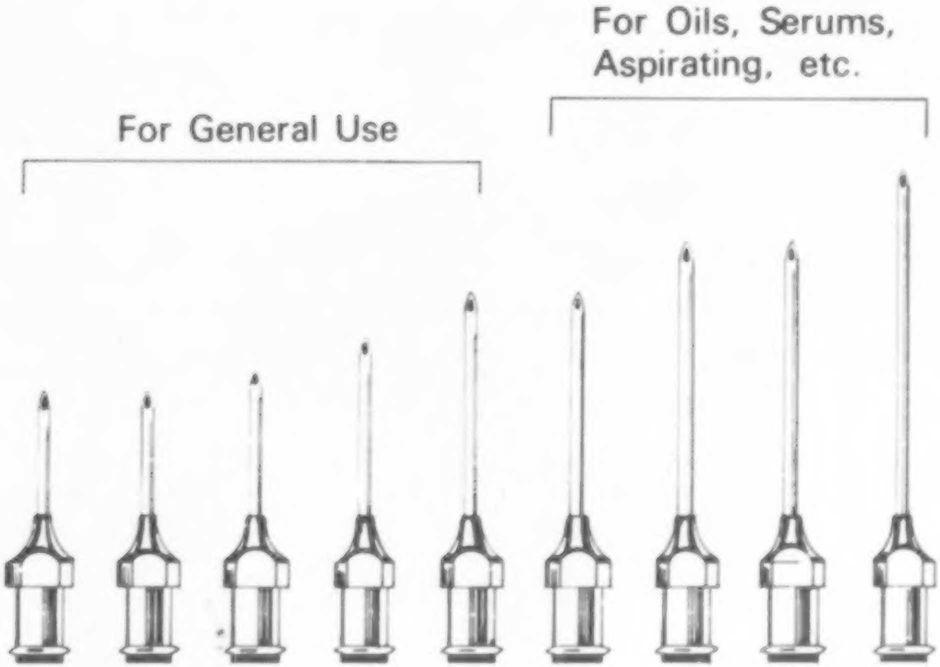
Cartridge

Components of a Syringe


Barrel
Plunger
1
2
3
4
5 cc
Tip or Hub
Scale or Calibrations

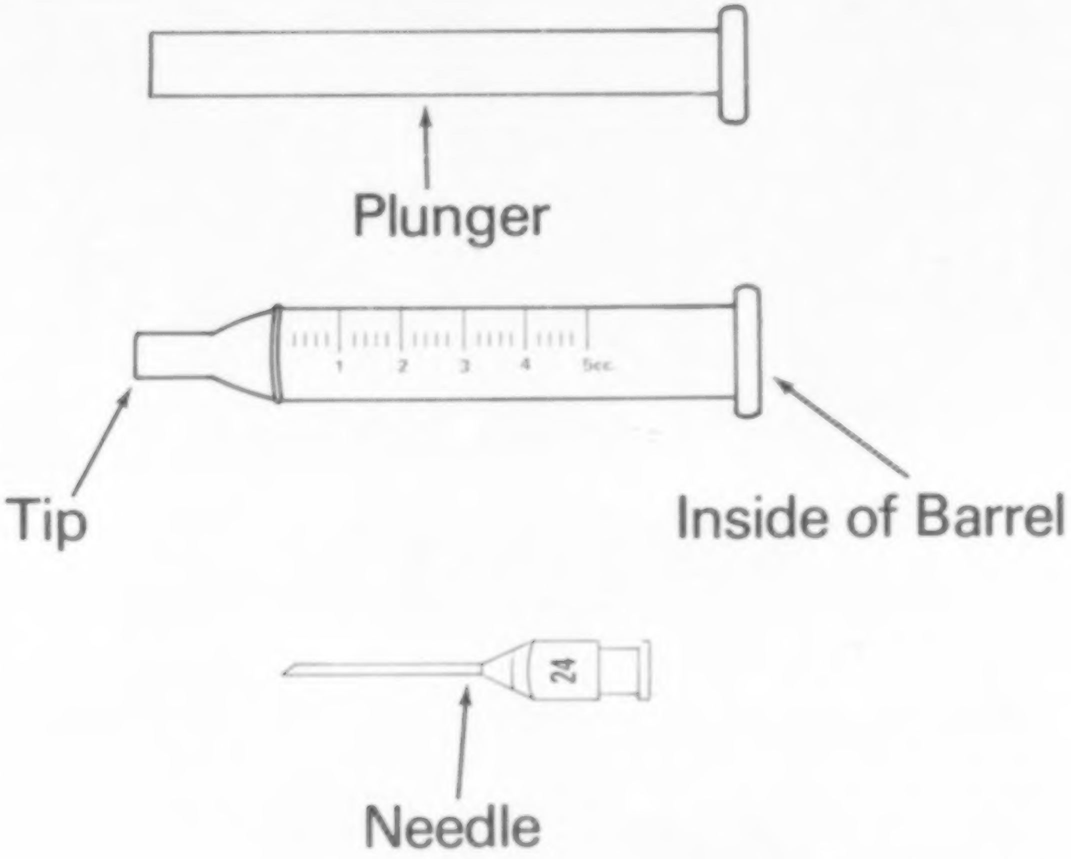
Needles


Point
Lumen
Cannula
Gauge No.
25
Hub
Flange


For Oils, Serums, Aspirating, etc.
For General Use

Gauges	27	26	25	24	23	22	20	19	18
Lengths	1/2	1/2	5/8	3/4	3/4	1—1¼ 1½	1—1¼ 1½	1½—2	1½—2

Syringe Parts To Be Kept Sterile


Plunger
1
2
3
4
5cc
Tip
Inside of Barrel
24
Needle

SYRINGES AND NEEDLES
UNIT VIII

JOB SHEET #1-USE A SYRINGE

(CAUTION: This simulated procedure need not be performed using sterile technique. It should be emphasized, however, that absolute sterility of medication, needles, and syringe is necessary whenever an injection is given.)

I. Equipment

   A. Syringes, various sizes for comparison

   B. Syringe (2½ or 3 cc size), one for each student to use

   C. Needle, one for each student

   D. Vials of solution

II. Procedure

   A. Identify the parts of the syringe

      1. Barrel

      2. Plunger

      3. Scales or calibrations

      4. Tip or hub

   B. Assemble syringe

   C. Observe the scales or markings on the syringe

      1. Locate the first long line, the 1 cc mark

      2. Count the short lines between the tip end of the barrel and the 1 cc mark. How much does each mark indicate?

   D. Pull plunger to mark indicating 1.4 cc; 1.5 cc; 0.6 cc; and 2 cc

   E. Compare the various sizes of syringes. Do the marks always indicate the same amount?

   F. Place a needle on the syringe

JOB SHEET #1

G. Pull plunger back to 1 cc mark

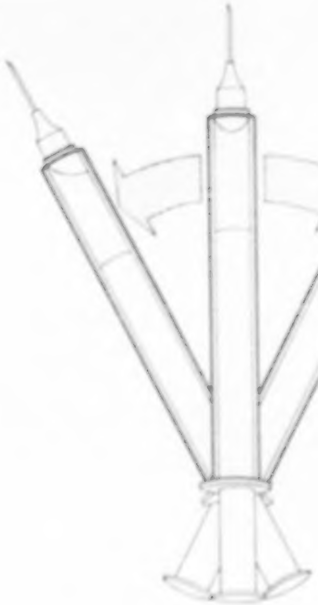
H. Inject 1 cc of air into a vial

I. Invert vial and withdraw 1 cc of fluid

(NOTE: Introducing a volume of air equal to the volume of solution to be withdrawn increases the pressure within the vial, making withdrawal of an accurate amount easier.)

J. Expel any remaining air from the syringe (Figure 1)

FIGURE 1



K. Discard solution

L. Draw up 1.6 cc of fluid

M. Dispose of used equipment as instructed when skill in using the syringe is demonstrated to the satisfaction of the instructor

SYRINGES AND NEEDLES
UNIT VIII

JOB SHEET #2 PREPARE AN INJECTION FROM A VIAL AND AN AMPULE

I. Equipment

   A. Medication order and card

   B. Syringe and needle

   C. Vial or ampule of medication

   D. Cotton balls or sponges

   E. Disinfectant solution

   F. Tray for equipment

II. Procedure using a vial

   A. Check medication order

   B. Obtain medication

   C. Compute dosage if necessary

   D. Wash hands

   E. Assemble equipment

   F. Remove cover if necessary

   G. Cleanse rubber stopper with an alcohol sponge (Figure 1)

   H. Draw air equal to desired dosage into syringe (Figure 2)

   I. Insert needle into rubber stopper of vial (Figure 3)

   J. Push air from syringe into vial (Figure 4)

   K. Invert vial and withdraw desired dosage (Figure 5)

   L. Withdraw needle from rubber stopper

   M. Remove air bubble from syringe

   N. Cover needle (Figure 6)

   O. Place syringe on tray with medicine card and additional alcohol sponges

JOB SHEET #2

III. Diagram of procedure

FIGURE 1

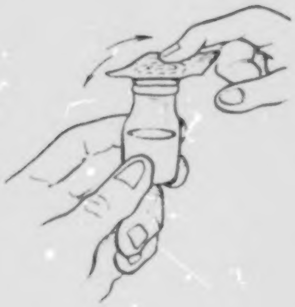


FIGURE 2

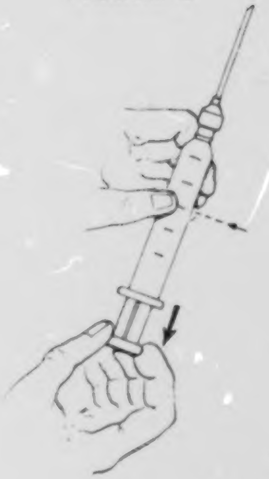


FIGURE 3

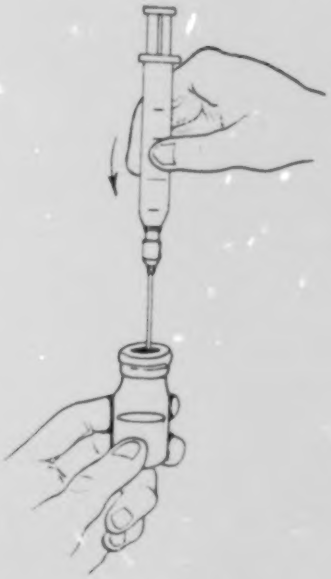


FIGURE 4

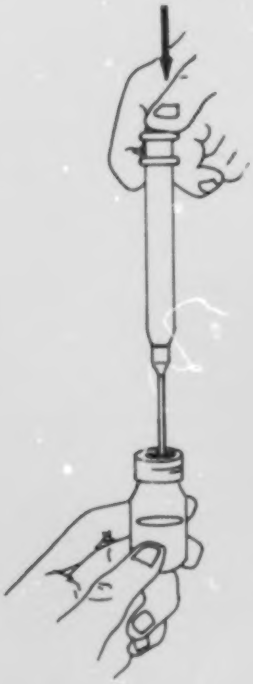


FIGURE 5

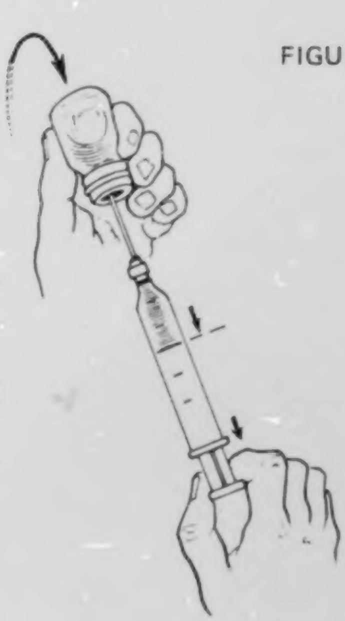
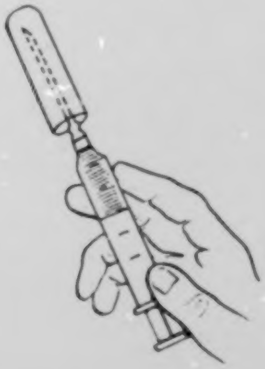


FIGURE 6



JOB SHEET #2

IV. Procedure using an ampule

A. Check medication order and card

B. Obtain medication

C. Compute dosage if necessary

D. Wash hands

E. Assemble equipment

F. Tap the top of the ampule to cause solution to collect in the body of the ampule (Figure 7)

G. Break off top of ampule at area of constriction (Figure 8)

(NOTE: Some ampules may need to be filed at the breaking line; others are prescored. Protect fingers from cutting by holding ampule in an alcohol sponge or sterile 2 x 2.)

H. Withdraw solution from ampule without injecting air (Figure 9)

(NOTE: If needle is not long enough to reach the bottom of the ampule, it may be necessary to hold ampule in horizontal position or to invert it to get the required dosage. See Figure 10.)

I. Cover needle (Figure 11)

J. Place syringe on tray with medicine card and additional alcohol sponges

V. Diagram of procedure

(NOTE: See following page.)

FIGURE 7

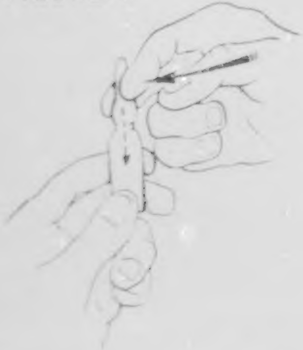
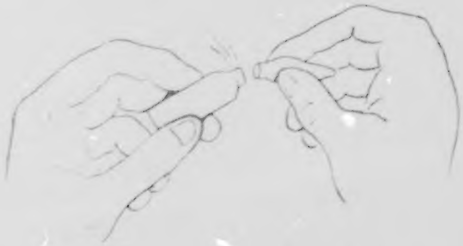


FIGURE 8



JOB SHEET #2

FIGURE 9

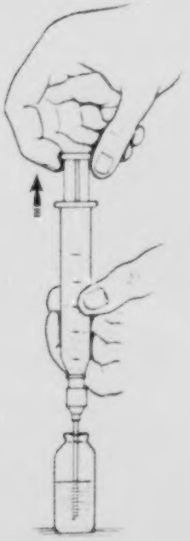


FIGURE 10

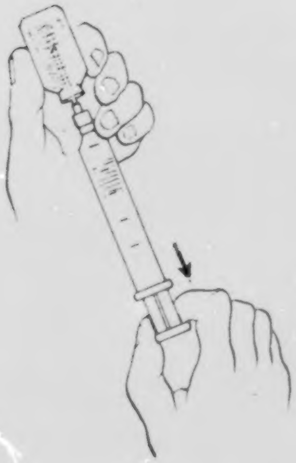
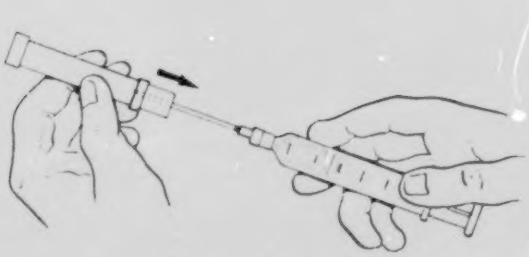


FIGURE 11



SYRINGES AND NEEDLES
UNIT VIII

JOB SHEET #3--PREPARE AN INJECTION FROM A TABLET

I. Equipment

  A. Medication order and card

  B. Medication

  C. Vial of sterile water or saline solution

  D. Syringe and needle

  E. Cotton balls or sponges

  F. Disinfectant solution

  G. Tray for equipment

II. Procedure

  A. Check medication order and card

  B. Obtain medication

  C. Compute dosage if necessary

  D. Wash hands

  E. Assemble equipment

  F. Drop tablet into barrel of syringe either from cap of medication bottle or from envelope containing tablet

  G. Place plunger in barrel

  H. Draw up volume of air equal to volume of solution to be used

  I. Push air into vial of solution

  J. Draw required volume of solution into syringe

  K. Agitate syringe until tablet is completely dissolved

  L. Expel air from syringe

  M. Cover needle

  N. Place syringe on tray with medicine card and additional alcohol sponges

SYRINGES AND NEEDLES
UNIT VIII

TEST

1. Match the terms on the right to the correct definition.

    _____a. Outer cylinder of a syringe

    _____b. Space or channel through a needle

    _____c. Diameter of an injection needle

    _____d. Angle of a surface; the angle of the point of an injection needle

    _____e. Sliding inner portion of a syringe

    1. Bevel
    2. Plunger
    3. Lumen
    4. Barrel
    5. Gauge

2. Name four kinds of syringes used for injections.

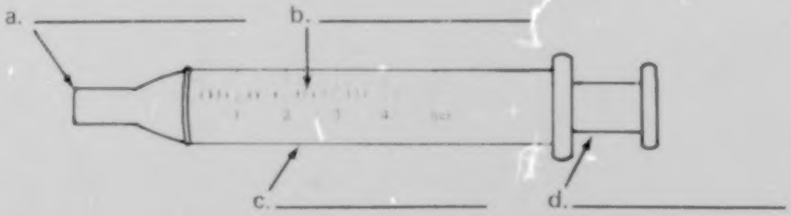
    a.

    b.

    c.

    d.

3. Label the components of a syringe on the diagram below.



4. State the ranges of size and length of needles used for injections.

    a. Size--

    b. Length--

5. List four factors which affect the selection of syringes and needles.

    a.

    b.

    c.

    d.

6. Discuss the care and cleaning of syringes and needles.

7. Demonstrate the ability to:

   a. Use a syringe.

   b. Prepare an injection from a vial and an ampule.

   c. Prepare an injection from a tablet.

(NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

SYRINGES AND NEEDLES
UNIT VIII

ANSWERS TO TEST

1. a. 4 d. 1
   b. 3 e. 2
   c. 5
2. a. Standard
   b. Insulin
   c. Tuberculin
   d. Cartridge
3. a. Tip or hub
   b. Scales or calibrations
   c. Barrel
   d. Plunger
4. a. From 16 to 27
   b. From one-half to two inches
5. a. Type of medication
   b. Route of administration
   c. Age, size, and physical condition of the patient
   d. Amount of medication
6. Discussion should include:
   a. The needle and portions of the syringe must be kept sterile at all times
   b. Use syringes carefully to avoid waste and/or breakage
   c. Protect needle points to keep them sharp
   d. Rinse reuseable needles and syringes with water as soon as possible after use
   e. Separate parts of the syringe and remove the needle after rinsing
   f. Discard disposable equipment in a safe manner
7. Performance skills will be evaluated to the satisfaction of the instructor.

ADMINISTRATION OF PARENTERAL MEDICATIONS
UNIT IX

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list sizes of equipment needed for parenteral administration of medications, precautions to observe, and nursing measures to use during administration. The student should be able to demonstrate injection techniques and care of patients receiving parenteral administrations. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with parenteral medications to the correct definitions.
2. List five methods of administration by injection.
3. List two sites for each method of administration by injection.
4. List two factors which influence the selection of each method of administration.
5. List the sizes of needles and syringes most commonly used for the administration of intradermal, subcutaneous, and intramuscular injections.
6. List five precautions to observe in administering intravenous or hypodermoclysis infusions.
7. List eight adverse signs and symptoms to watch for during intravenous administration.
8. Discuss monitoring an intravenous administration.
9. Discuss determining the rate of flow for intravenous infusions.
10. State the formula for calculating the rate of flow.
11. Solve problems using the formula for calculating the rate of flow.
12. List three special instructions concerning the administration of blood and blood products.
13. List four commonly used blood products.

14. Demonstrate the ability to:

    a. Locate intramuscular injection sites.

    b. Administer an injection.

    c. Care for a patient receiving an intravenous infusion.

    d. Care for a patient receiving a hypodermoclysis infusion.

    e. Use a cartridge syringe.

ADMINISTRATION OF PARENTERAL MEDICATIONS
UNIT IX

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information, assignment, and job sheets.

  C. Discuss terminal and specific objectives.

  D. Discuss information and assignment sheets.

  E. Demonstrate and discuss procedures outlined on the job sheets.

  F. Provide equipment for job sheets.

  G. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Complete assignment sheet.

  E. Demonstrate the ability to accomplish the procedures outlined on the job sheets.

  F. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Transparency masters

    1. TM 1--Subcutaneous or Hypodermic Injection

    2. TM 2--Intradermal Injection

    3. TM 3--Intramuscular Injection

4. TM 4--Hypodermoclysis Infusion
5. TM 5--Intravenous Injection
6. TM 6--Subcutaneous Sites
7. TM 7--Intradermal Sites
8. TM 8--Intramuscular Sites
9. TM 9--Hypodermoclysis Sites
10. TM 10--Some Intravenous Sites
11. TM 11--Intravenous Infusion

D. Assignment Sheet #1--Calculate the Rate of Flow for Intravenous Infusions

E. Answers to assignment sheet

F. Job sheets

1. Job Sheet #1--Locate Intramuscular Injection Sites
2. Job Sheet #2--Administer an Injection
3. Job Sheet #3--Care for Patient Receiving an Intravenous Infusion
4. Job Sheet #4--Care for Patient Receiving a Hypodermoclysis Infusion
5. Job Sheet #5--Use a Cartridge Syringe

G. Test

H. Answers to test

II. References:

A. Falconer, Mary K. et al. *The Drug, The Nurse, The Patient.* Philadelphia, Pennsylvania: W.B. Saunders Company, 1974.

B. Fuerst, Elinor V. et al. *Fundamentals of Nursing.* Philadelphia, Pennsylvania: J.B. Lippincott Company, 1974.

C. Rapier, Dorothy K. et al. *Practical Nursing.* St. Louis, Missouri: The C.V. Mosby Company, 1970.

D. Skelley, Esther G. *Medications and Mathematics for the Nurse.* Albany, New York: Delmar Publishers, 1972.

E. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J.B. Lippincott Company, 1973.

III. Filmstrips:

  A. "Subcutaneous and Intramuscular Injections." Trainex Corporation.

  B. "Nursing Care During Intravenous Therapy." Trainex Corporation.

  C. "Management of Blood Transfusion." Trainex Corporation.

  D. "Venipuncture and Starting an Intravenous Infusion." Trainex Corporation.

IV. Other materials--"Train-A-Ject ™ Injection Training System." Glendale, California 91201: Pharmaseal.

ADMINISTRATION OF PARENTERAL MEDICATIONS
UNIT IX

INFORMATION SHEET

I. Terms and definitions

A. Dehydration--Condition resulting from undue loss of fluids from the body

B. Aspirate--Withdraw fluids and/or gases from a cavity

C. Syringe--Apparatus made of glass or plastic, fitted snugly onto a hollow needle; used to aspirate body fluids or to inject fluids for diagnostic or therapeutic purposes

D. Immobilize--To fix in place as with splints

E. Infiltration--Process by which cells, fluids, or other substances pass into tissue spaces or into cells

F. Cyanosis--Bluish discoloration of the skin and mucous membranes

G. Tachycardia--Excessive rapidity of the heartbeat

H. Patency--State of being open or unobstructed

I. Air embolus--Large amount of air in the heart or vascular system

J. Dissipate--To dissolve or spread thin to the point of vanishing

K. Wheal--Suddenly formed elevation of the skin surface

L. Urticaria--Hives; skin condition characterized by the appearance of itching, elevated welts, or wheals

M. Hematuria--Urine containing blood

N. Packed red cells--Erythrocytes from a unit of blood with most of the plasma removed

O. Platelet transfusion--Blood with increased platelet count prepared from four to six pints of donor blood

P. Whole plasma--Fluid portion of the blood after the cells have been removed

Q. Induration--Hardened area of tissue

INFORMATION SHEET

R. Serum albumin--Chief protein of blood serum

S. Cannula--Small tubular instrument for insertion into a blood vessel or body cavity

II. Methods of administration by injection

A. Subcutaneous (Transparency 1)

B. Intradermal (Transparency 2)

C. Intramuscular (Transparency 3)

D. Hypodermoclysis (Transparency 4)

E. Intravenous (Transparency 5)

(NOTE: These methods of administration may be done by nurses. Other parenteral methods include intraperitoneal, intracardial, intrapleural, intraspinal, and intrauterine and are done only by physicians.)

III. Sites for injections

A. Subcutaneous (Transparency 6)

1. Lateral surface of upper arm

2. Anterior or lateral portion of thigh

3. Abdomen

B. Intradermal (Transparency 7)

1. Palmar surface of forearm

2. Posterior surface of thorax

C. Intramuscular (Transparency 8)

1. Deltoid muscle of the arm

2. Upper outer quadrant of the buttock in the gluteus medius muscle

3. Lateral thigh in vastus lateralis muscle

4. Ventrogluteal site in gluteus medius or minimus

D. Hypodermoclysis (Transparency 9)

1. Anterior or lateral surface of thigh

2. Under the breasts

INFORMATION SHEET

3. Under the arms

   (NOTE: This is called axillary seepage.)

E. Intravenous (Transparencies 10 and 11)

1. Forearm
2. Hand
3. Ankle
4. Scalp

IV. Factors influencing the selection of the method of administration

A. Subcutaneous

1. When drug effectiveness will be altered by digestive system
2. For more rapid effect than by oral administration
3. For accuracy necessary for smaller dosages
4. When oral administration is inadvisable

   (NOTE: Oral administration may be inadvisable due to the patient's condition of the effect the drug may have on the digestive system.)

B. Intradermal

1. Mainly for diagnostic purposes
2. For administration of vaccines

C. Intramuscular

1. When immediate effect is desired
2. For medication unsuitable for subcutaneous, intravenous, or oral administration
3. For injection of a larger amount of medication to be absorbed over a long period of time

D. Hypodermoclysis

1. To provide large amounts of fluid and/or medication

INFORMATION SHEET

2. For relief of dehydration when intravenous administration is inadvisable

   (NOTE: This method has largely been replaced by intravenous administration, but may be used in pediatric or geriatric patients when veins are difficult to locate and maintain.)

E. Intravenous

1. For injection of drug to provide immediate or controlled effect

2. For introduction of food, fluids, or drugs when oral administration is inadvisable

V. Sizes of needles and syringes used for administration of injections

(NOTE: The needles and syringes may be reuseable or disposable. The size and length of the needle depends upon the type and amount of medication to be given; for example, thick or oil solutions are given with larger gauge needles and irritating substances should be given with longer needles. Syringes may be any size except when very small amounts are to be injected and then tuberculin syringes should be used.)

A. Intradermal

1. Needle--1/2 inch; 26- or 27-gauge

2. Syringe--Tuberculin

B. Subcutaneous

1. Needle--1/2 to 1 inch; 24- or 25-gauge

2. Syringe--2 1/2 to 5 cc

C. Intramuscular

1. Needle--1 to 1 1/2 inches; 20- to 22-gauge

2. Syringe--2 1/2 to 5 cc

VI. Precautions for administering intravenous or hypodermoclysis infusions

A. Be sure that the right patient receives the right fluid at the prescribed rate in the specified amount

B. All equipment must be kept sterile

C. All air must be removed from tubing prior to beginning administration

INFORMATION SHEET

D. Rate of flow should be between forty and sixty drops per minute for an intravenous infusion unless ordered otherwise

E. Fluid should be kept in sealed container until time of administration

F. If treatment is to continue for a prolonged period of time, remove clothing from extremity to be used

G. Tubing should be changed every twenty-four hours or as specified

H. Change patient's position cautiously but frequently during administration

I. Observe patient carefully during administration of infusion; report any unusual reaction or symptoms promptly

VII. Adverse signs and symptoms to watch for during intravenous administration

A. Infiltration or swelling around the needle

B. Syncope

C. Vomiting

D. Chilling

E. Respiratory difficulty

F. Increased pulse rate

G. Significant change in blood pressure

H. Fever

I. Cyanosis

J. Red streak at site

K. Subjective symptoms

1. Nausea
2. Headache
3. Dizziness
4. Numbness or tingling
5. Backache
6. Chest pain

INFORMATION SHEET

VIII. Monitoring an intravenous administration

- A. Check for proper identification of medication and patient
- B. Check patient frequently for adverse signs and symptoms
- C. Check equipment for proper functioning
    1. Position
    2. Drip chamber
    3. Tubing
    4. Drip regulator
    5. Connecting adaptor
    6. Needle, cannula, or intravenous catheter
    7. Immobilization device
- D. Check and regulate rate of flow as prescribed
- E. Observe amount of fluid in container
- F. Plan ahead for additional supplies if infusion is to be continued
- G. Provide for comfort and safety of the patient
- H. Seek assistance as needed
- I. Discontinue when infusion is completed

IX. Determining rate of flow for intravenous infusions

- A. Administration sets packaged by various manufacturers yield varying numbers of drops per milliliter
- B. Number of drops per milliliter is stated on the package which contains the administration set

  (NOTE: The usual rates are Mead and Baxter, 10 drops/ml; Abbott, 15 drops/ml; Cutter, 20 drops/ml; pediatric administration sets, 60 drops/ml. Instead of memorizing these rates, check the package whenever an IV is in use.)

- C. By using the formula for calculating the rate of flow, it is possible to determine whether the IV is running at the prescribed rate

INFORMATION SHEET

D. Rate of flow should be checked at least every fifteen minutes for infants and children and at least every thirty minutes for adults

E. At each check

1. Count the drops per minute

2. Note the amount of fluid remaining to determine if the fluid is flowing at the desired rate

   (NOTE: If it has been determined that a certain amount of fluid should be given in an hour, a significantly larger or smaller amount taken indicates that the flow is not constant.)

F. These calculations serve as guidelines only; the nurse is still responsible for observing other signs and symptoms which may indicate an adverse reaction

X. Formula for calculating rate of flow

Multiply the total volume by the number of drops per milliliter; divide by the total infusion time expressed in minutes; equals the number of drops to give per minute

$$\frac{\text{Total volume} \times \text{gtts/ml}}{\text{Minutes of infusion time}} = \text{drops per minute}$$

XI. Applying the formula

Give 1000 ml of 5% dextrose in water (5% D/W) in two hours using a Cutter administration kit (20 gtts/ml)

Volume 1000 ml
Gtts/ml 20
Infusion time in minutes 120

$$\frac{1000 \times 20}{120} = \frac{20000}{120} = \frac{2000}{12} = 166\ 2/3 \text{ or } 167 \text{ gtts/min}$$

XII. Special instructions concerning administration of blood and blood products

A. Observe closely for signs of reaction including

1. Chills
2. Urticaria or rash
3. Temperature elevation
4. Nausea and vomiting

INFORMATION SHEET

        5. Dyspnea
        6. Headache
        7. Hematuria

    B. If reaction occurs, clamp off tubing but do not remove needle from patient's arm

    C. Report symptoms to charge nurse immediately

    D. If a reaction occurs, save the first urine specimen to be examined for red blood cells

XIII. Commonly used blood products

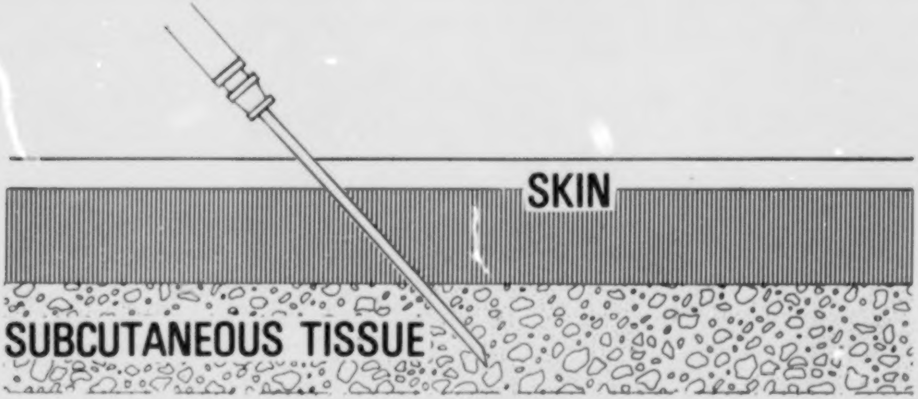
    A. Whole blood

    B. Packed red cells

    C. Platelet transfusion

    D. Whole plasma

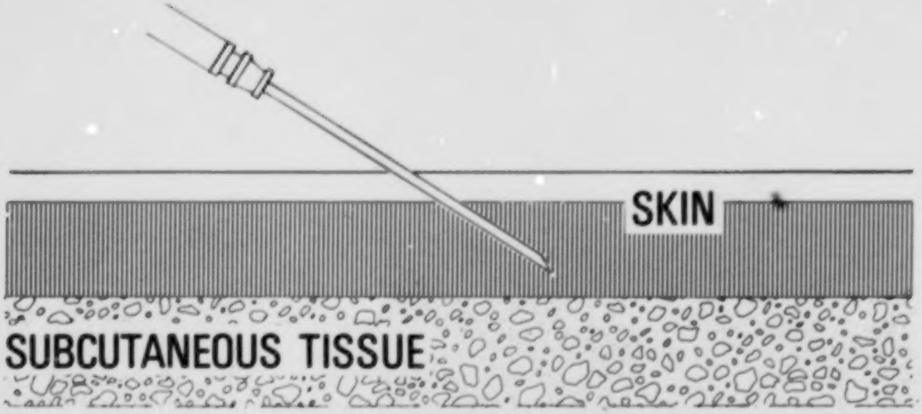
Subcutaneous or Hypodermic Injection


SKIN
SUBCUTANEOUS TISSUE

Needle Enters the Skin at a 45 Degree Angle;
the Tip Stops in the Subcutaneous Tissue

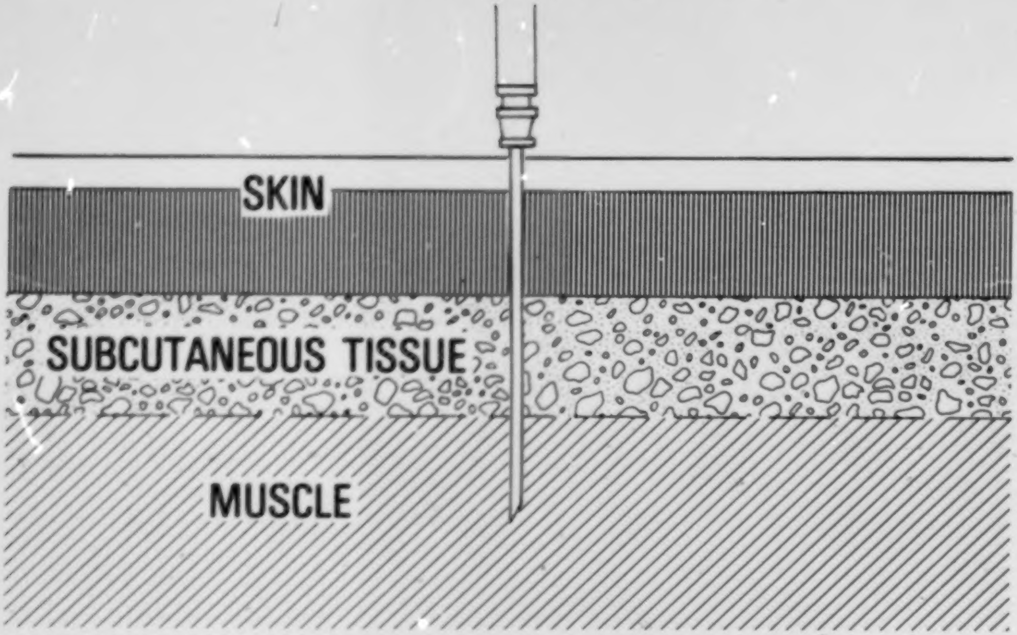
N II - 251-A

Intradermal Injection


SKIN
SUBCUTANEOUS TISSUE

Needle Is Held at a 15 Degree Angle
and Inserted into the Dermal Layer

Intramuscular Injection

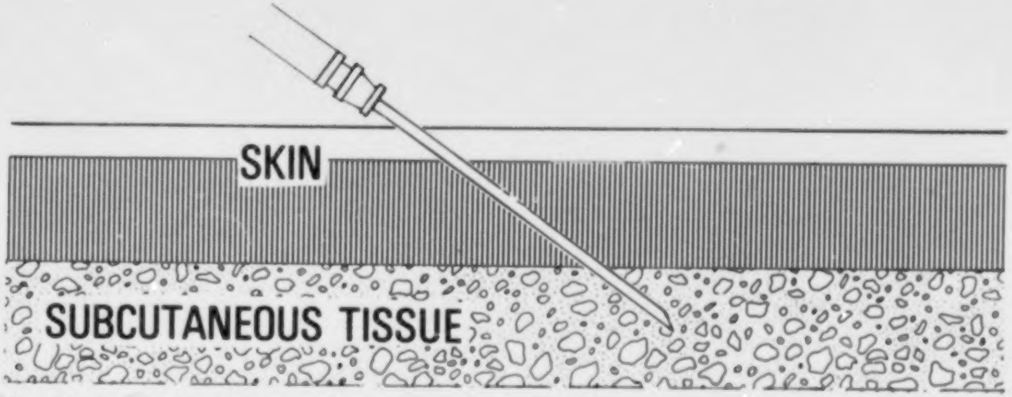

SKIN
SUBCUTANEOUS TISSUE
MUSCLE

The Needle Is Inserted at a 90 Degree Angle into the Center of a Muscle

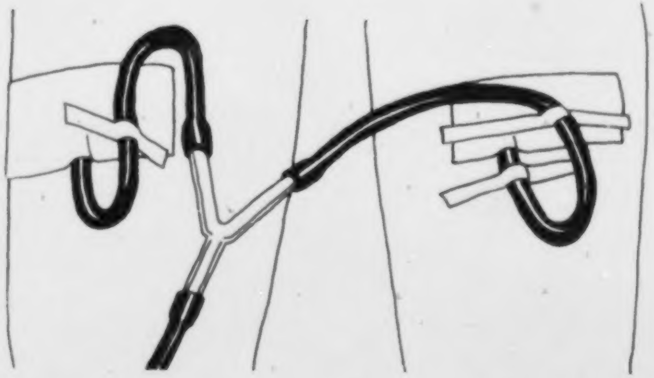
N II - 255-A

215-216

Hypodermoclysis Infusion

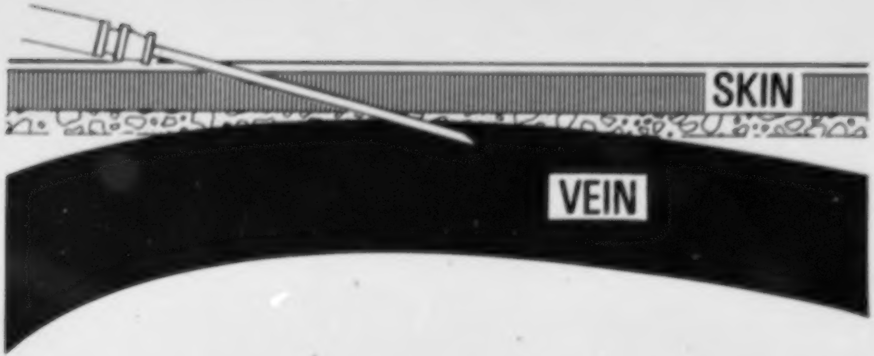

SKIN
SUBCUTANEOUS TISSUE

Needle Is Inserted at a 45 Degree Angle Into the Subcutaneous Tissue



Equipment Is Secured to the Anterior Thighs

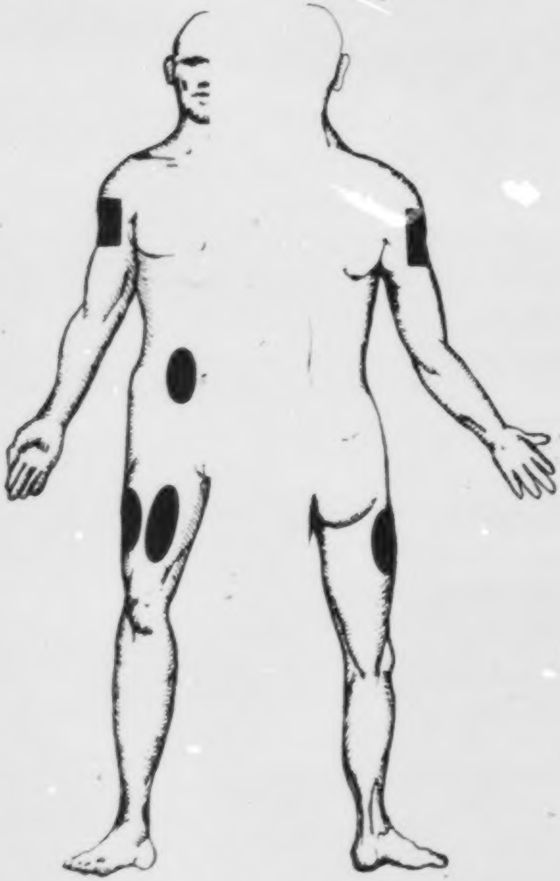
Intravenous Injection



Needle Penetrates Skin and Vein at a 45 Degree Angle

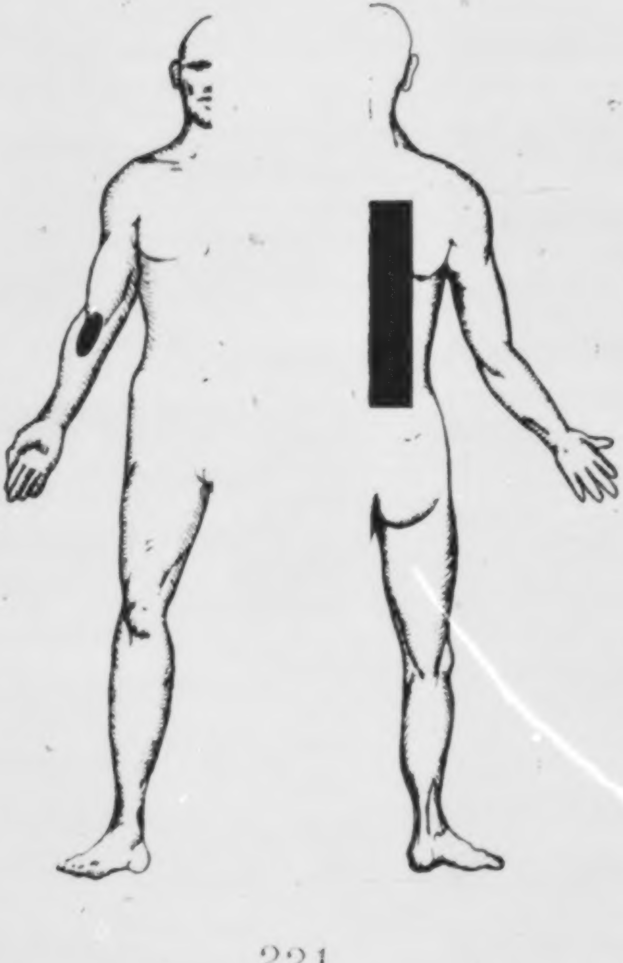
N II - 259-A

Subcutaneous Sites



N II - 261-A

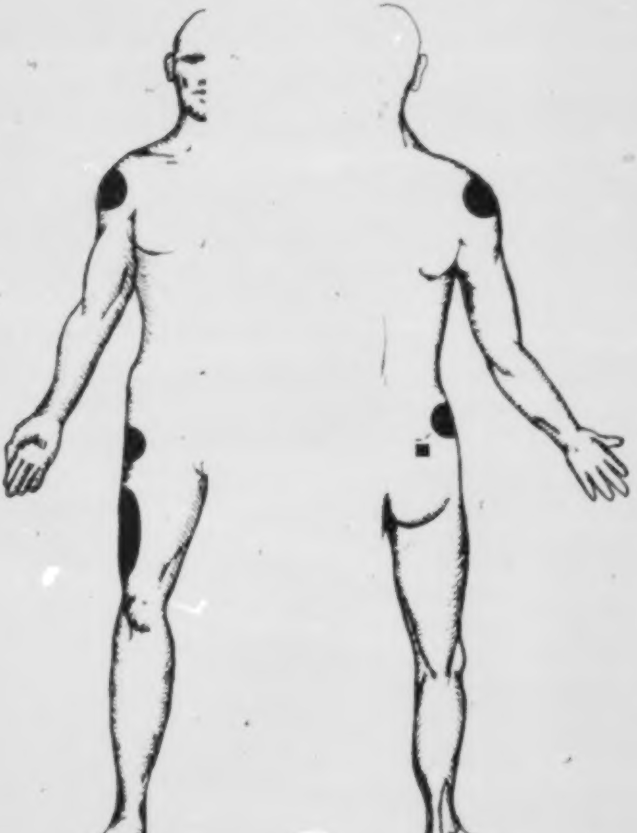
Intradermal Sites



221

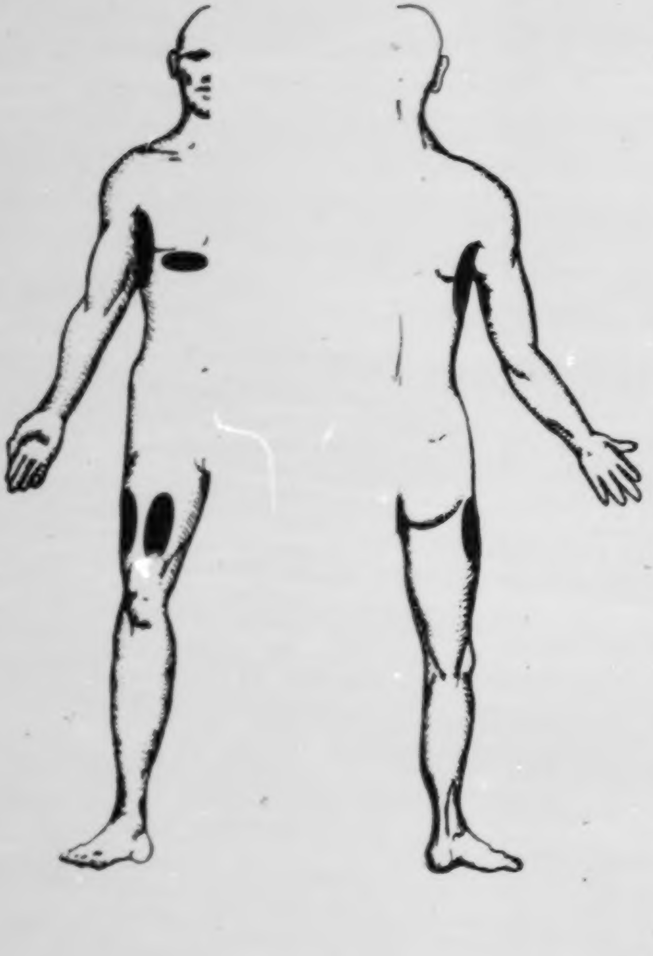
N II - 263-A

Intramuscular Sites



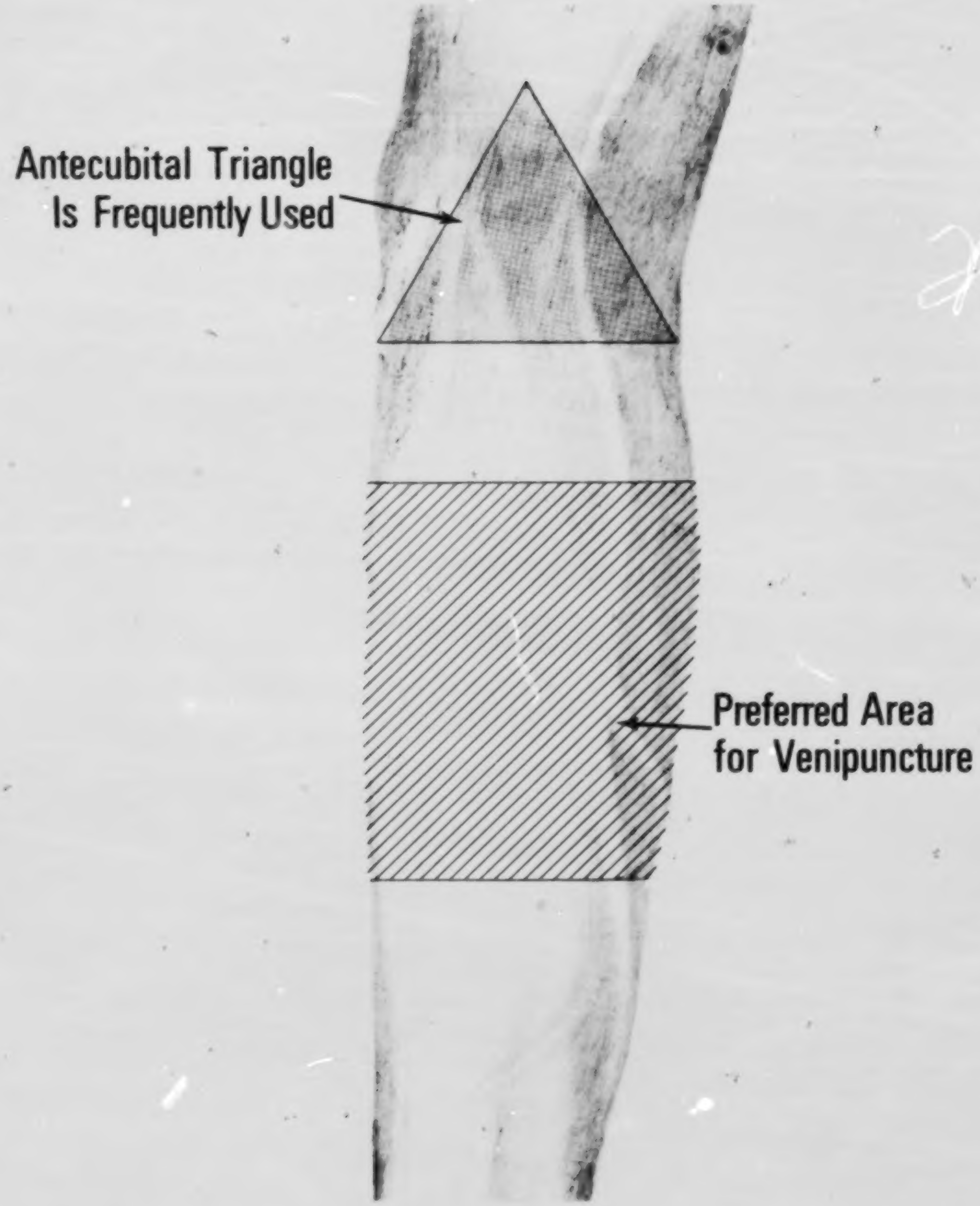
N II - 265-A

Hypodermoclysis Sites

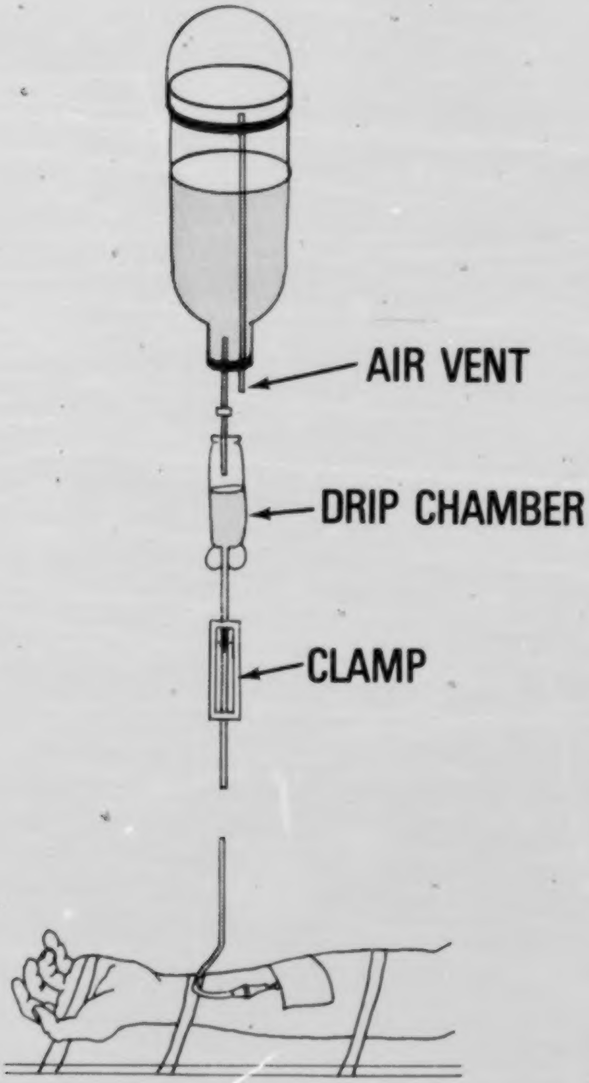


N II - 267-A

Some Intravenous Sites


Antecubital Triangle
Is Frequently Used
Preferred Area
for Venipuncture

Intravenous Infusion


AIR VENT
DRIP CHAMBER
CLAMP

ADMINISTRATION OF PARENTERAL MEDICATIONS
UNIT IX

ASSIGNMENT SHEET #1--CALCULATE THE RATE OF FLOW FOR INTRAVENOUS INFUSIONS

Select the correct answer for each of the following problems. Show your work in the spaces provided.

1. Ordered: 2000 ml of normal saline solution to run as continuous drip for 24 hours using a Cutter administration set (20 gtts/ml).

   a. 28 gtts/min   b. 42 gtts/min   c. 12 gtts/min

2. Ordered: 200 ml of Ringer's lactate solution per day using a pediatric administration set (60 gtts/ml).

   a. 60 gtts/min   b. 8 gtts/min   c. 16 gtts/min

3. Ordered: 1000 ml of 5% dextrose in normal saline with 10 Gm of staphcillin. Give in six hours using an Abbott administration set (15 gtts/ml).

   a. 48 gtts/min   b. 42 gtts/min   c. 24 gtts/min

4. Ordered: 1000 cc of 5% dextrose in water (5% D/W) with 5,000,000 U of aqueous penicillin added. Administer with a Baxter set (10 gtts/ml) and give 500,000 U of penicillin each hour.

   a. 10 gtts/min   b. 24 gtts/min   c. 17 gtts/min

ASSIGNMENT SHEET #1

5. Ordered: Add 500 ml normal saline to present IV for an eighteen-month-old infant. Run for 10 hours using a pediatric administration set (60 gtts/ml).

   a. 50 gtts/min b. 25 gtts/min c. 30 gtts/min

ADMINISTRATION OF PARENTERAL MEDICATIONS
UNIT IX

ANSWERS TO ASSIGNMENT SHEET

1. a. 28 gtts/min
2. b. 8 gtts/min
3. b. 42 gtts/min
4. c. 17 gtts/min
5. a. 50 gtts/min

ADMINISTRATION OF PARENTERAL MEDICATIONS
UNIT IX

JOB SHEET #1--LOCATE INTRAMUSCULAR INJECTION SITES

I. Deltoid area

A. Remove gown or shirt

(NOTE: The deltoid area cannot be satisfactorily exposed by rolling up the sleeve.)

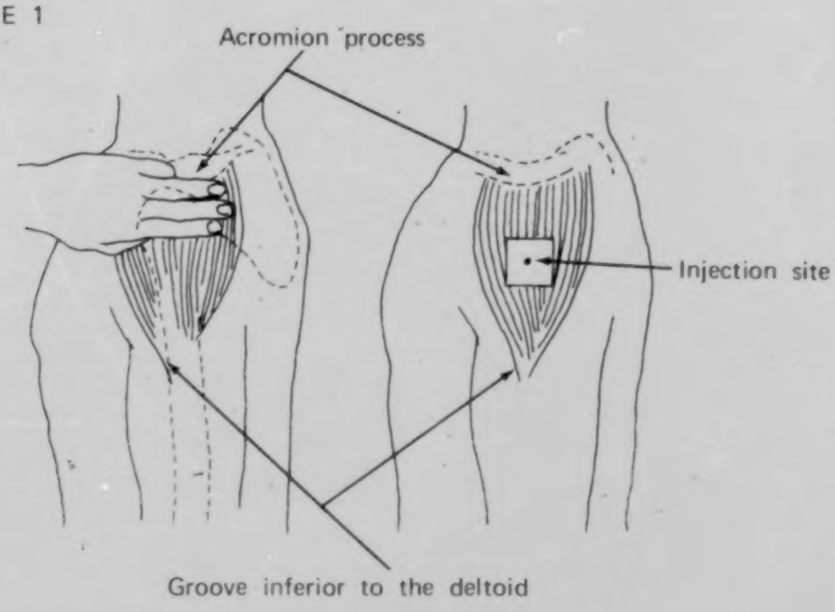
B. Palpate the acromion process

(NOTE: The acromion process is the lateral, triangular projection of the spine of the scapula which forms the point of the shoulder.)

C. Measure two or three fingerbreadths below the acromion process

D. Locate the injection site below the fingers but above the groove inferior to the deltoid (Figure 1)

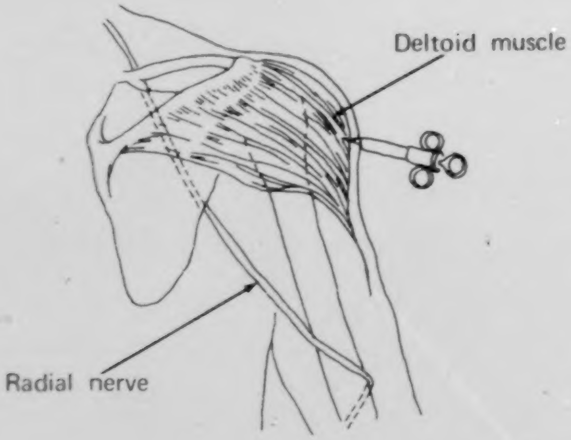
FIGURE 1


Acromion process
Injection site
Groove inferior to the deltoid

JOB SHEET #1

(Caution--An injection into the middle or lower third of the arm should be avoided as it might injure the radial nerve. See Figure 2.)

FIGURE 2



II. Posterior gluteal area

- A. Position patient on abdomen if possible
- B. Expose gluteal area
- C. Palpate the gluteal landmarks
    1. Superior--Iliac crest
    2. Inferior--Gluteal fold
    3. Medial--Division between the buttocks
    4. Lateral--Anterior iliac spine; the greater trochanter

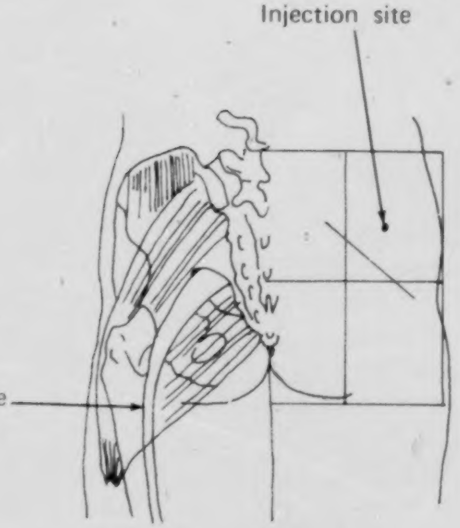
       (NOTE: The greater trochanter is the process on the femur at the upper end of its lateral surface.)
- D. Divide the gluteal area into four quadrants
- E. Draw a line from the posterior superior iliac crest to the greater trochanter

JOB SHEET #1

F. Injection site is in the upper, outer quadrant, superior to the line drawn from the iliac crest to the greater trochanter (Figure 3)

(Caution: This injection site is located to avoid damage to the sciatic nerve.)

FIGURE 3



III. Lateral thigh in vastus lateralis

A. Place patient on back, abdomen, or in sitting position

B. Explore lateral side of thigh from the greater trochanter to the knee

C. Palpate greater trochanter

D. Measure distance one handbreadth below greater trochanter (Figure 4)

E. Measure one handbreadth above the knee (Figure 4)

F. Place one hand on the midanterior thigh, the other on the midlateral thigh (Figure 5)

G. Insert needle in vastus lateralis to the depth of one inch in site thus determined

FIGURE 4

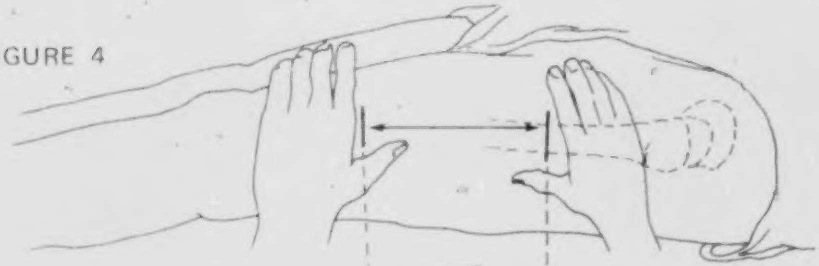
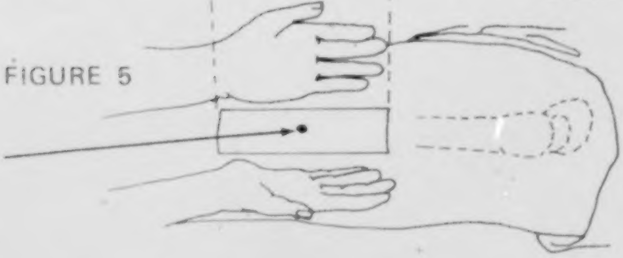


FIGURE 5



IV. Ventrogluteal site

A. Place patient on back or abdomen

B. Locate the right ventrogluteal (Figure 6)

1. Place the left hand with the tip of the index finger on the anterior superior iliac spine, with fingers pointing toward the patient's chest

2. Spread the index and middle fingers as far apart as possible, forming a V

C. Locate injection site between the two fingers below the iliac crest

D. Locate the right ventrogluteal (Figure 7)

1. Place the middle finger of the left hand on the anterior superior iliac spine

2. Separate index and middle fingers to form a V

JOB SHEET #1

FIGURE 6

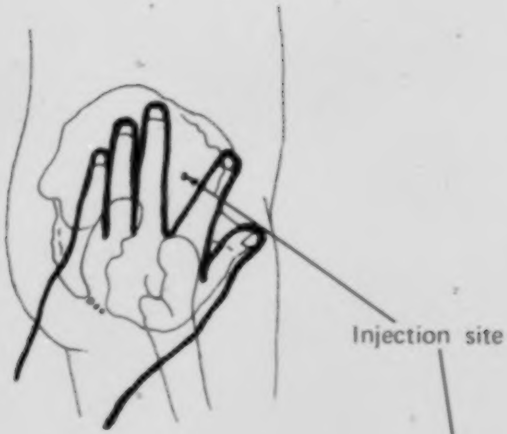
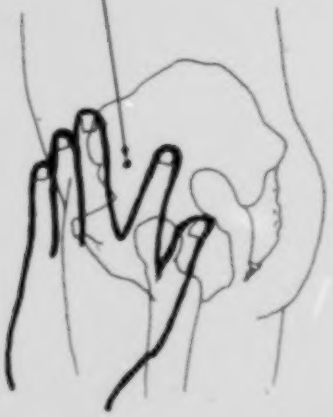

Injection site

FIGURE 7



ADMINISTRATION OF PARENTERAL MEDICATIONS
UNIT IX

JOB SHEET #2--ADMINISTER AN INJECTION

I. Equipment

   A. Sterile syringes, correct size for medication to be given

   B. Needles, correct size to suit the amount of medication and the method of administration

   C. Medication as ordered

   D. Medicine cards

   E. Cotton balls or pledgets

   F. Disinfectant for the skin (usually alcohol 70%)

   G. Tray

   H. Waste container

   I. Extra needles, in case of contamination

II. Preparation for all injections

   A. Check the label of the medication with the medicine card

   B. Compute dosage if necessary

   C. Wash hands

   D. Read label and prepare the medication for injection

   E. Cover needle

   F. Place prepared syringe on tray with medication card, cotton balls, and disinfectant

   G. Read label as medication bottle is returned to proper place

   H. Identify patient

   I. Explain procedure to patient

   J. Provide privacy

   K. Position patient as needed

JOB SHEET #2

III. Procedure for giving a subcutaneous or hypodermic injection

(NOTE: The sites most used for subcutaneous injections are the lateral surface of the upper arm and the anterior or lateral portion of the thigh.)

A. Expel air from syringe, being careful not to lose any medicine and keeping the needle sterile

B. Cleanse the injection site with alcohol sponge; using a circular motion, start at the center and extend out to cleanse approximately a two-inch area

C. Pinch up the skin

D. Quickly insert the needle at a 45°-60° angle with the skin

E. Release the skin and pull back on the plunger to be sure the tip of the needle is not in a vein

F. Push in the plunger slowly

G. Withdraw the needle quickly while holding the skin at the injection site with an alcohol sponge

H. Massage the area gently with an alcohol sponge unless contraindicated

IV. Procedure for giving an intramuscular injection

(NOTE: The usual sites for intramuscular injections are the deltoid, vastus lateralis, and gluteus medius muscles and ventrogluteal site.)

A. Expel air from syringe

B. Cleanse injection site

C. Stretch the skin taut

D. Quickly insert the needle at a 60°-90° angle to the skin

E. Release the skin and pull back on the plunger to be sure the tip of the needle is not in a vein

F. Push in the plunger of the syringe

G. Withdraw the needle quickly while holding skin at the injection site with an alcohol sponge

H. Massage area gently with alcohol sponge

JOB SHEET #2

V. Procedure for giving an intradermal injection

(NOTE: The usual site for an intradermal injection is the palmar surface of the forearm.)

A. Expel air from syringe

B. Cleanse the injection site

C. Hold skin taut by grasping posterior surface of patient's arm with nurse's hand encircling arm

D. Insert needle directly under the skin at an angle of 0°-15°

E. Inject prescribed amount of medication

(NOTE: A wheal will develop.)

F. Remove the needle, but do not massage the area

VI. Care of equipment

A. Rinse reuseable syringe and needle with water

B. Separate parts

C. Discard disposable equipment in prescribed manner

D. Return all equipment to proper place

E. Wash hands

VII. Charting medication

A. Chart promptly

B. Chart name of medication, amount given, exact time given, method and site of administration

C. Note any unusual symptoms before, during, or after administration

D. Chart refusal of medication and report it to the charge nurse

E. Report and record administration of PRN medications immediately

F. Note and chart patient's reaction when PRN medication is given

JOB SHEET #2

VIII. Z-track technique for injections

(NOTE: This method avoids leakage of medication from deeper tissues into subcutaneous tissues. This technique is used for irritating medications, repository medications, and for giving injections to obese patients.)

A. Prepare medication as for other injections, using a needle 1 1/2 inches long

B. Change the needle after withdrawing the medication from the vial when preparing irritating substances such as Imferon

C. Position the patient

(NOTE: If the patient is standing, he should be bearing his weight on the leg opposite the injection site. If in bed, he should be in the lateral position with the injection site uppermost.)

D. Wipe injection site with alcohol sponge

E. Pull skin and underlying tissue to one side with one hand; hold until injection is given

F. Insert needle quickly at 90° angle to skin

G. Pull back on plunger to determine whether the needle is in a vein

H. Inject medication slowly; wait ten seconds before withdrawing needle

I. Withdraw needle rapidly on the line of insertion

J. Release tissue being held with hand, allowing tissue to slide back into place, sealing in fluid

K. Massage site gently but firmly, unless contraindicated

ADMINISTRATION OF PARENTERAL MEDICATIONS
UNIT IX

JOB SHEET #3--CARE FOR PATIENT RECEIVING INTRAVENOUS INFUSION

I. Equipment

- A. IV standard
- B. Solution to be administered
- C. Tubing with drip regulator
- D. Sterile syringe
- E. Sterile needles or intravenous catheter
- F. Control valve or clamp
- G. Immobilization device (splints or armboard)
- H. Gauze bandage
- I. Adhesive tape
- J. Alcohol sponges
- K. Tourniquet
- L. Tray

II. Procedure

- A. Wash hands
- B. Assist with assembling equipment as directed
- C. Prepare patient
    - 1. Identify patient
    - 2. Provide privacy
    - 3. Ask patient to urinate
    - 4. Position patient comfortably
    - 5. Apply immobilization device as needed
- D. Assist as needed during starting of intravenous infusion

JOB SHEET #3

E. Care during administration

  1. Maintain rate of flow as established
  2. Observe for swelling around needle
  3. Report any swelling around needle or any complaint of unusual symptoms

F. Care of patient after IV infusion is finished

  1. Make sure all solutions ordered have been given before container is empty
  2. Clamp off tubing when container is empty
  3. Apply gentle pressure with an alcohol sponge while withdrawing the needle
  4. Maintain pressure for a short time until bleeding is stopped; apply bandaid
  5. Apply a snug sterile dressing if the injection site continues to bleed
  6. Provide for patient's comfort

G. Care of equipment

  1. Remove all IV equipment from patient's room
  2. Clean and replace equipment as necessary
  3. Discard disposable equipment in a safe manner

H. Record the procedure including

  1. Time infusion was started and by whom
  2. Type and amount of fluid given
  3. Site of administration
  4. Any unusual symptoms or reaction
  5. Time infusion was discontinued and by whom

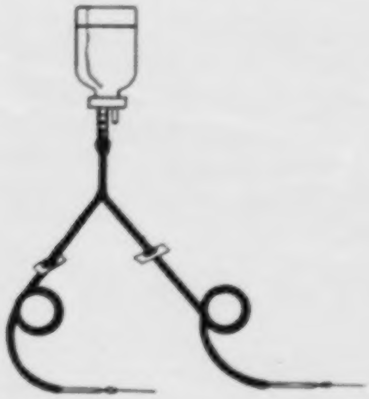
ADMINISTRATION OF PARENTERAL MEDICATIONS
UNIT IX

JOB SHEET #4--CARE FOR PATIENT RECEIVING HYPODERMOCLYSIS INFUSION

I. Equipment

- A. IV standard
- B. Solution to be administered
- C. Tubing with a Y connector
- D. Two clamps to control rate of flow
- E. Two needles

  (NOTE: The needles used for hypodermoclysis are usually longer than the ones used for intravenous infusions.)
- F. Adhesive tape
- G. Cotton balls with disinfectant
- H. Sterile 2 x 2s or 4 x 4s
- I. Sterile syringes
- J. 2 cc syringe with 25-gauge needle



JOB SHEET #4

II. Procedure

- A. Wash hands
- B. Assist with assembling equipment
- C. Prepare patient
    1. identify patient
    2. Provide privacy
    3. Ask patient to urinate
    4. Position patient comfortably in supine position
    5. Divide top covers using one to cover patient above thighs and a second cover for the legs
- D. Begin the infusion
    1. Cleanse area on thighs with antiseptic solution
    2. Expel air from tubing
    3. Hold skin taut
    4. Insert needle at 15° angle to full length
    5. Place a sterile gauze dressing under hub of needle
    6. Secure needle with tape
    7. Apply sterile dressing
    8. Secure dressing
    9. Secure tubing to thighs
- E. Care during administration
    1. Check rate of flow frequently

       (NOTE: Usually an enzyme is given through the tubing just after the hypodermoclysis is started. This enzyme hastens the rate of absorption.)
    2. Slow down or stop the fluid for a short time if the tissue becomes quite distended and firm; then resume

JOB SHEET #4

3. Assist patient to change position frequently since a hypodermoclysis usually continues for a period of several hours

4. Massage administration site gently to assist rate of absorption

5. Observe patient for any adverse reaction

F. Discontinuing hypodermoclysis

1. Check to see that all prescribed fluid has been given before removing needles

2. Remove tape holding needles and withdraw needles quickly

3. Apply a snug sterile dressing to decrease any seepage from the injection sites

4. Provide for patient's comfort

G. Care of equipment

1. Remove all hypodermoclysis equipment from patient's room

2. Clean or discard equipment as necessary

3. Return equipment to proper storage

H. Record the procedure including

1. Time hypodermoclysis was started and by whom

2. Type and amount of fluid given

3. Site of administration

4. Any unusual symptoms or reactions

5. Time hypodermoclysis was discontinued and by whom

ADMINISTRATION OF PARENTERAL MEDICATIONS
UNIT IX

JOB SHEET #5--USE A CARTRIDGE SYRINGE

I. Equipment

   A. Medication order and card

   B. Metal cartridge syringe

   C. Cartridge of medication

   D. Cotton balls or sponges

   E. Antiseptic solution

   F. Tray

II. Procedure

   A. Check medication order with cartridge

   B. Compute dosage if necessary

   C. Wash hands

   D. Assemble equipment

   E. Hold the barrel of the syringe and withdraw the plunger (Figure 1)

   F. Pull plunger down until it is at a right angle to the barrel (Figure 2)

   G. Insert sterile cartridge into barrel, needle end first (Figure 3)

   H. Turn cartridge in a clockwise direction until it is secured into the needle end of the barrel (Figure 4)

   I. Swing plunger back into place and twist plunger onto threaded shaft of cartridge piston (Figure 5)

   (CAUTION: Do not overtighten.)

   J. Remove rubber sheath from needle just prior to injection (Figure 6)

   K. Pull back slightly on plunger to aspirate before injection

   L. Replace sheath on needle immediately after administering injection

   M. Disengage plunger by rotating counterclockwise

JOB SHEET #5

N. Pull plunger out and down at a right angle

O. Rotate cartridge counterclockwise to disengage at needle end of barrel

P. Remove cartridge from barrel

Q. Bend needle back and forth on hub until it snaps

R. Discard both cartridge and sheath-protected needle

S. Provide for patient's comfort

T. Replace equipment

U. Wash hands

V. Report and record procedure

III. Diagram of procedure

FIGURE 1

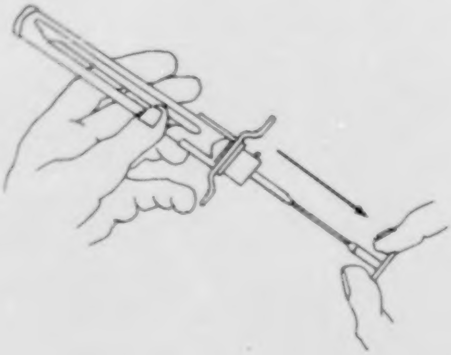
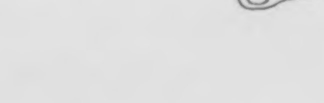


FIGURE 2



JOB SHEET #5

FIGURE 3

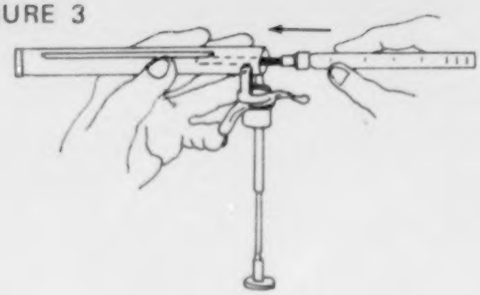


FIGURE 4

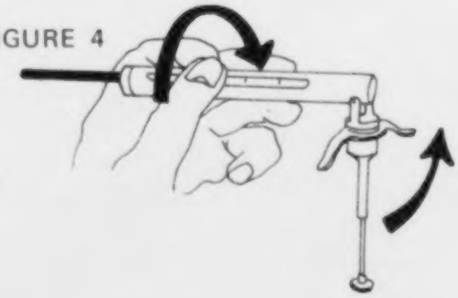


FIGURE 5

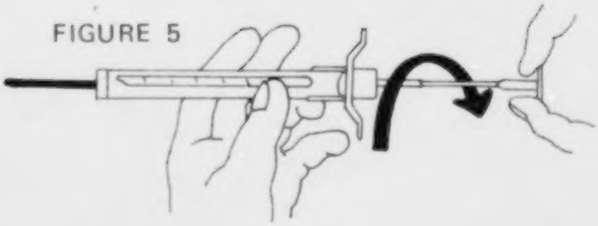
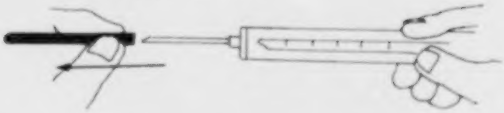


FIGURE 6



ADMINISTRATION OF PARENTERAL MEDICATIONS
UNIT IX

TEST

1. Match the terms on the right to the correct definition.

______a. Process by which cells, fluids, or other substances pass into tissue spaces or into cells

______b. Erythrocytes from a unit of blood with most of the plasma removed

______c. Hives; skin condition characterized by the appearance of itching, elevated welts, or wheals

______d. Withdraw fluids and/or gases from a cavity

______e. Urine containing blood

______f. To dissolve or spread thin to the point of vanishing

______g. Condition resulting from undue loss of fluids from the body

______h. Blood with increased platelet count prepared from four to six pints of donor blood

______i. Large amount of air in the heart or vascular system

______j. Small tubular instrument for insertion into a blood vessel or body cavity

______k. State of being open or unobstructed

______l. To fix in place as with splints

______m. Fluid portion of the blood after the cells have been removed

______n. Apparatus made of glass or plastic, fitted snugly onto a hollow needle; used to aspirate body fluids or to inject fluids for diagnostic or therapeutic purposes

1. Whole plasma
2. Cannula
3. Dissipate
4. Cyanosis
5. Induration
6. Patency
7. Hematuria
8. Serum albumin
9. Tachycardia
10. Dehydration
11. Urticaria
12. Infiltration
13. Platelet transfusion
14. Aspirate
15. Packed red cells
16. Air embolus
17. Immobilize
18. Syringe
19. Wheal

_____o. Excessive rapidity of the heartbeat

_____p. Hardened area of tissue

_____q. Bluish discoloration of the skin and mucous membranes

_____r. Suddenly formed elevation of the skin surface

_____s. Chief protein of blood serum

2. List five methods of administration by injection.

   a.

   b.

   c.

   d.

   e.

3. List two sites for each method of administration by injection.

   a.

      1)

      2)

   b.

      1)

      2)

   c.

      1)

      2)

   d.

      1)

      2)

   e.

      1)

      2)

4. List two factors which influence the selection of each method of administration.

   a.

      1)

      2)

   b.

      1)

      2)

   c.

      1)

      2)

   d.

      1)

      2)

   e.

      1)

      2)

5. List the sizes of needles and syringes most commonly used for the administration of intradermal, subcutaneous, and intramuscular injections.

   a. Intradermal

      1) Needle sizes--

      2) Syringe sizes--

   b. Subcutaneous

      1) Needle sizes--

      2) Syringe sizes--

   c. Intramuscular

      1) Needle sizes--

      2) Syringe sizes--

6. List five precautions to observe in administering intravenous or hypodermoclysis infusions.

   a.

   b.

   c.

   d.

   e.

7. List eight adverse signs and symptoms to watch for during intravenous administration.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

8. Discuss monitoring an intravenous administration.

9. Discuss determining the rate of flow for intravenous infusions.

10. State the formula for calculating the rate of flow.

11. Solve the following problems using the formula for calculating the rate of flow. Show all your work. Circle the correct answer.

   a. Ordered: 2000 cc of 5% dextrose in water. Give in four hours with a Cutter administration set (20 gtts/ml).

      1) 125 gtts/min   2) 88 gtts/min   3) 167 gtts/min

   b. Give 1000 ml of normal saline in two hours using an Abbott administration set (15 gtts/ml).

      1) 75 gtts/min   2) 100 gtts/min   3) 125 gtts/min

c. Give 1000 ml of 5% dextrose in saline with 40 mEq of potassium chloride. No more than 20 mEq of potassium chloride should be given per hour. Use a Baxter administration set (10 gtts/ml).

1) 83 gtts/min 2) 65 gtts/min 3) 105 gtts/min

12. List three special instructions concerning the administration of blood and blood products.

a.

b.

c.

13. List four commonly used blood products.

a.

b.

c.

d.

14. Demonstrate the ability to:

a. Locate intramuscular injection sites.

b. Administer an injection.

c. Care for a patient receiving an intravenous infusion.

d. Care for a patient receiving a hypodermoclysis infusion.

e. Use a cartridge syringe.

(NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

ADMINISTRATION OF PARENTERAL MEDICATIONS
UNIT IX

ANSWERS TO TEST

1. a. 12
   b. 15
   c. 11
   d. 14
   e. 7
   f. 3
   g. 10
   h. 13
   i. 16
   j. 2
   k. 6
   l. 17
   m. 1
   n. 18
   o. 9
   p. 5
   q. 4
   r. 19
   s. 8

2. a. Subcutaneous
   b. Intradermal
   c. Intramuscular
   d. Hypodermoclysis
   e. Intravenous

3. Any two in each of the following groups:
   a. Subcutaneous
      1) Lateral surface of upper arm
      2) Anterior or lateral portion of thigh
      3) Abdomen
   b. Intradermal
      1) Palmar surface of forearm
      2) Posterior surface of thorax
   c. Intramuscular
      1) Deltoid muscle of the arm
      2) Upper outer quadrant of the buttock in the gluteus medius muscle
      3) Lateral thigh in vastus lateralis muscle
      4) Ventrogluteal site in gluteus medius or minimus

d. Hypodermoclysis

  1) Anterior or lateral surface of thigh

  2) Under the breasts

  3) Under the arms

e. Intravenous

  1) Forearm

  2) Hand

  3) Ankle

  4) Scalp

4. Any two in each of the following groups:

a. Subcutaneous

  1) When drug effectiveness will be altered by digestive system

  2) For more rapid effect than by oral administration

  3) For accuracy necessary for smaller dosages

  4) When oral administration is inadvisable

b. Intradermal

  1) Mainly for diagnostic purposes

  2) For administration of vaccines

c. Intramuscular

  1) When immediate effect is desired

  2) For medication unsuitable for subcutaneous, intravenous, or oral administration

  3) For injection of a larger amount of medication to be absorbed over a long period of time

d. Hypodermoclysis

  1) To provide large amount of fluid and/or medication

  2) For relief of dehydration when intravenous administration is inadvisable

e. Intravenous

1) For injection of drug to provide immediate or controlled effect

2) For introduction of food, fluids, or drugs when oral administration is inadvisable

5. a. 1) 1/2 inch; 26- or 27-gauge

2) Tuberculin

b. 1) 1/2 to 1 inch; 24- or 25-gauge

2) 2 1/2 to 5 cc

c. 1) 1 to 1 1/2 inches; 20- to 22-gauge

2) 2 1/2 to 5 cc

6. Any five of the following:

a. Be sure that the right patient receives the right fluid at the prescribed rate in the specified amount

b. All equipment must be kept sterile

c. All air must be removed from tubing prior to beginning administration

d. Rate of flow should be between forty and sixty drops per minute for an intravenous infusion unless ordered otherwise

e. Fluid should be kept in sealed container until time of administration

f. If treatment is to continue for a prolonged period of time, remove clothing from extremity to be used

g. Tubing should be changed every twenty-four hours or as specified

h. Change patient's position cautiously but frequently during administration

i. Observe patient carefully during administration of infusion; report any unusual reaction or symptoms promptly

7. Any eight of the following:

a. Infiltration or swelling around the needle

b. Syncope

c. Vomiting

d. Chilling

e. Respiratory difficulty

- f. Increased pulse rate
- g. Significant change in blood pressure
- h. Fever
- i. Cyanosis
- j. Red streak at site
- k. Subjective symptoms
    - 1) Nausea
    - 2) Headache
    - 3) Dizziness
    - 4) Numbness or tingling
    - 5) Backache
    - 6) Chest pain

8. Discussion should include:

- a. Check for proper identification of medication and patient
- b. Check patient frequently for adverse signs and symptoms
- c. Check equipment for proper functioning
    - 1) Position
    - 2) Drip chamber
    - 3) Tubing
    - 4) Drip regulator
    - 5) Connecting adaptor
    - 6) Needle, cannula, or intravenous catheter
    - 7) Immobilization device
- d. Check and regulate rate of flow as prescribed
- e. Observe amount of fluid in container
- f. Plan ahead for additional supplies if infusion is to be continued
- g. Provide for comfort and safety of the patient

h. Seek assistance as needed

i. Discontinue when infusion is completed

9. Discussion should include:

   a. Administration sets packaged by various manufacturers yield varying numbers of drops per milliliter

   b. Number of drops per milliliter is stated on the package which contains the administration set

   c. By using the formula for calculating the rate of flow, it is possible to determine whether the IV is running at the prescribed rate

   d. Rate of flow should be checked at least every fifteen minutes for infants and children and at least every thirty minutes for adults

   e. At each check

      1) Count the drops per minute

      2) Note the amount of fluid remaining to determine if the fluid is flowing at the desired rate

   f. These calculations serve as guidelines only; the nurse is still responsible for observing other signs and symptoms which may indicate an adverse reaction

10. Multiply the total volume by the number of drops per milliliter; divide by the total infusion time expressed in minutes; equals the number of drops to give per minute

$$\frac{\text{Total volume x gtts/ml}}{\text{Minutes of infusion time}} = \text{drops per minute}$$

11. a. 3

    b. 3

    c. 1

12. Any three of the following:

    a. Observe closely for signs of reaction including

       1) Chills

       2) Urticaria or rash

       3) Temperature elevation

       4) Nausea and vomiting

        5) Dyspnea
        6) Headache
        7) Hematuria

    b. If reaction occurs, clamp off tubing but do not remove needle from patient's arm

    c. Report symptoms to charge nurse immediately

    d. If a reaction occurs, save the first urine specimen to be examined for red blood cells

13. a. Whole blood

    b. Packed red cells

    c. Platelet transfusion

    d. Whole plasma

14. Performance skills will be evaluated to the satisfaction of the instructor.

ADMINISTRATION OF INSULIN
UNIT X

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list uses of insulin and discuss its action. The student should be able to list general facts about insulin and oral hypoglycemics and demonstrate preparation of insulin injections. The student should be able to list advantages and disadvantages of oral hypoglycemics. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with insulin administration to the correct definitions.
2. List three therapeutic uses of insulin.
3. Discuss the absorption and action of insulin.
4. List six general facts about insulin.
5. Name the type of insulin which can be given intravenously.
6. List types of insulin classified as to rate of action and the time when hypoglycemia is most apt to occur for each.
7. List three general facts about oral hypoglycemics.
8. List two advantages of oral hypoglycemics.
9. List two disadvantages of oral hypoglycemics.
10. List three oral hypoglycemic preparations.
11. Discuss the testing of urine for glucose.
12. Demonstrate the ability to:
    a. Prepare insulin for injection.
    b. Test urine for glucose and acetone.

ADMINISTRATION OF INSULIN
UNIT X

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information and job sheets.

  C. Make transparencies.

  D. Discuss terminal and specific objectives.

  E. Discuss information sheet.

  F. Demonstrate and discuss procedures outlined on the job sheets.

  G. Provide various sizes of insulin syringes and vials of insulin for comparison and/or use by each student.

  H. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Demonstrate the ability to perform the procedures outlined on the job sheets.

  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Transparency masters

    1. TM 1--Insulin Syringes

    2. TM 2--Rotating Insulin Injection Areas

- D. Job Sheets
    - 1. Job Sheet #1--Prepare Insulin for Injection
    - 2. Job Sheet #2--Test Urine for Glucose and Acetone
- E. Test
- F. Answers to test

II. References:

- A. Brunner, Lillian S. et al. *The Lippincott Manual of Nursing Practice.* Philadelphia, Pennsylvania: J.B. Lippincott Company, 1974.
- B. Falconer, Mary W. et al. *The Drug, The Nurse, The Patient.* Philadelphia, Pennsylvania: W.B. Saunders Company, 1974.
- C. Galloway, John A. *Diabetes Mellitus.* Indianapolis, Indiana: Eli Lilly and Company, 1973.
- D. Squire, Jessie E. and Jean M. Welch. *Basic Pharmacology for Nurses.* St. Louis, Missouri: The C.V. Mosby Company, 1973.
- E. *Pharmacology Lesson Plans.* Tennessee State Board for Vocational Education, 1970.
- F. *Physician's Desk Reference (PDR).* Oradell, New Jersey: Medical Economics Company.

III. Other materials:

- A. Filmstrips
    - 1. "Insulin Timing and Action." Trainex Corporation.
    - 2. "Insulin Dose Changes." Trainex Corporation.
    - 3. "Insulin Injection." Trainex Corporation.
- B. Film--"The Secretion of Insulin." Eli Lilly and Company.
- C. Booklets and other instructional materials for patients with diabetes are available from Ames Company; Becton, Dickinson, and Company; and Eli Lilly and Company.

ADMINISTRATION OF INSULIN
UNIT X

INFORMATION SHEET

I. Terms and definitions

- A. Insulin--Active principle of secretion of the islands of Langerhans in the pancreas; hormone essential for metabolism of carbohydrates and fats
- B. Psychosis--Impairment of mental functioning severe enough to interfere with an individual's ability to meet the ordinary demands of life
- C. Debility--Weakness; lack of strength
- D. Cachexia--Severe generalized weakness, malnutrition, and emaciation
- E. Hypoglycemia--Reduction of blood glucose below normal
- F. Hyperglycemia--Excess of glucose in the blood
- G. Oral hypoglycemics--Drugs which lower the blood sugar level
- H. Glycosuria--Presence of glucose in the urine
- I. Acetonuria/ketonuria--Presence of acetone or ketone bodies in the urine

II. Therapeutic uses of insulin

- A. Chiefly for treatment of diabetes mellitus
- B. Production of comatose state in some types of psychoses
- C. Stimulation of appetite in debilitated or cachectic patients

III. Absorption and action of insulin

- A. Destroyed by the digestive juices so cannot be given orally
- B. Freely soluble in body fluids
- C. Absorbed rapidly from parenteral sites
- D. Increases the transport of glucose into the cells, particularly in muscular and fatty tissues

INFORMATION SHEET

E. Assists fat and protein metabolism

F. Controls, with aid of diet, but does not cure diabetes mellitus

(NOTE: At the present time there is no cure for diabetes. The condition is controlled with diet, the use of drugs, or both.)

IV. General facts about insulin

A. Comes in ten milliliter vials clearly labeled with potency per ml, as 40, 80, or 100 units

(NOTE: Chief concentrations of insulin in current use are U-40 and U-80. In 1971, however, the American Diabetes Association resolved that one concentration be used in the United States in order to decrease errors in dosage. The concentration of one hundred units per milliliter, U-100, was agreed upon by the American Diabetes Association, the Food and Drug Administration, and the manufacturers. It is hoped that physicians and patients will quickly adopt this strength.)

B. Only insulin syringes are used to administer insulin; syringe markings must correspond to strength of insulin (Transparency 1)

(NOTE: To administer U-40 strength insulin, a U-40 syringe must be used. Using any other insulin syringe could cause an incorrect dosage.)

C. Insulin dosages are individualized and are always prescribed by a physician

D. Insulin and diet must be administered at prescribed times to avoid reactions of hypoglycemia and/or hyperglycemia

E. All forms of insulin can be given subcutaneously, usually in the arms and thighs

F. Site of injection should be rotated so that one site is not used more than once per month (Transparency 2)

(NOTE: One sequence of rotation is accomplished by using site one of each alphabetical area; then begin with site two of each alphabetical area and so on).

G. Food intake, exercise, illness, and emotional stress will alter the amount of insulin needed

H. All forms of insulin should be refrigerated

I. All bottles of insulin are marked with an expiration date and should not be used after that date

INFORMATION SHEET

V. Intravenous administration of insulin-Only Regular Insulin can be given intravenously; Regular Insulin is always clear

VI. Types of insulin

Rate of Action Type of Insulin	Time of Action (hours) Onset	 Peak	 Duration	When hypoglycemia is most apt to occur
RAPID				
Regular Crystalline (unmodified)	One hour or less	2-4	5-7	Before lunch
Semilente	1	2-8	12-16	Before lunch
INTERMEDIATE				
Globin	2-4	6-12	12-18	Late afternoon
NPH	2-4	6-12	18-24	Late afternoon
Lente	2-4	6-12	18-24	Late afternoon
SLOW				
Protamine Zinc	3-6	14-20	24-36	During night and early morning
Ultralente	8	18-24	24-36	During night and early morning

VII. General facts about oral hypoglycemics

A. Used exclusively for treatment of patients with hyperglycemia

B. May be used alone or with injections of insulin

C. Synthetic compounds which are not "oral insulin", but for many patients they eliminate the need for insulin and for others they permit lower insulin dosage

D. Diabetic diet and close medical supervision required during administration of oral hypoglycemics

VIII. Advantages of oral hypoglycemics

A. Permits ease of administration

B. Promotes patient acceptance

C. Eliminates or decreases necessity of repeated injections

INFORMATION SHEET

D. Permits utilization and/or stimulation of patient's own insulin production

E. Need not be refrigerated

IX. Disadvantages of oral hypoglycemics

A. Adverse reactions including severe hypoglycemia, skin rashes, or gastrointestinal disturbances

B. Ineffective for certain diabetics

C. Greater risk of self-medication and changing of dosage without consulting the physician

D. More danger of toxicity with long term use than with insulin

X. Some oral hypoglycemic preparations

Generic Name	Brand or Trade Name	Usual Daily Dosage (in mg)	Duration of Action (in hours)
Acetohexamide	Dymelor	250-1000	12 - 24
Chlorpropamide	Diabinese	100-500	24 - 60
Tolazamide	Tolinase	250-1000	12 - 24
Tolbutamide	Orinase	500-2000	5 - 10
Phenformin	DBI	25-200	4 - 6
Phenformin (delayed release form)	DBI-TD	50-200	8 - 12

XI. Testing urine for glucose

A. Urine is usually tested four times a day, before meals and at bedtime

B. Two urine specimens are collected at a thirty-minute interval, usually; the first specimen is discarded and the second specimen is tested

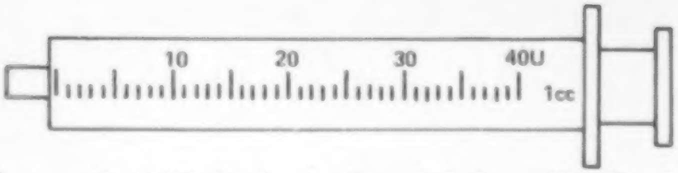
C. Dosage of insulin is adjusted according to the amount of glucose in the urine and its time of appearance in relation to insulin injections and meals

D. The physician usually requests a test for acetone when the urine contains glucose

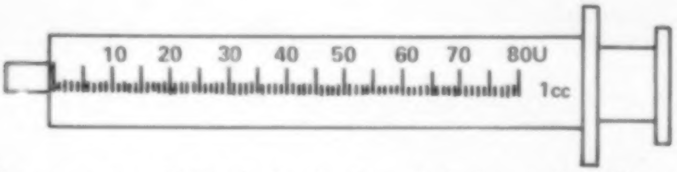
(NOTE: Acetone or ketones are normally produced by the liver as one step in the metabolism of fats. Under abnormal conditions such as uncontrolled diabetes mellitus, starvation, or the intake of a diet composed mostly of fats, the breakdown of fats may be halted at the ketone stage causing ketosis, an increase of ketone bodies in the blood, and ketonuria.)

E. An accurate record of the results of urine tests must be kept

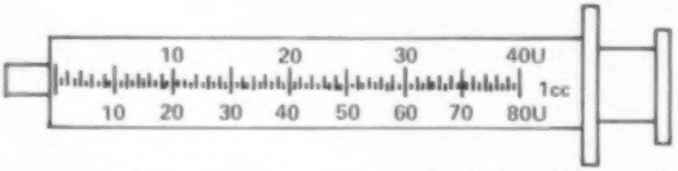
Insulin Syringes


10
20
30
40U
1cc

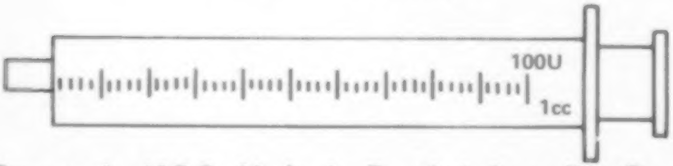
A. One-ml. (40 U./ml. Scale) Insulin Syringe


10
20
30
40
50
60
70
80U
1cc

B. One-ml. (80 U./ml. Scale) Insulin Syringe

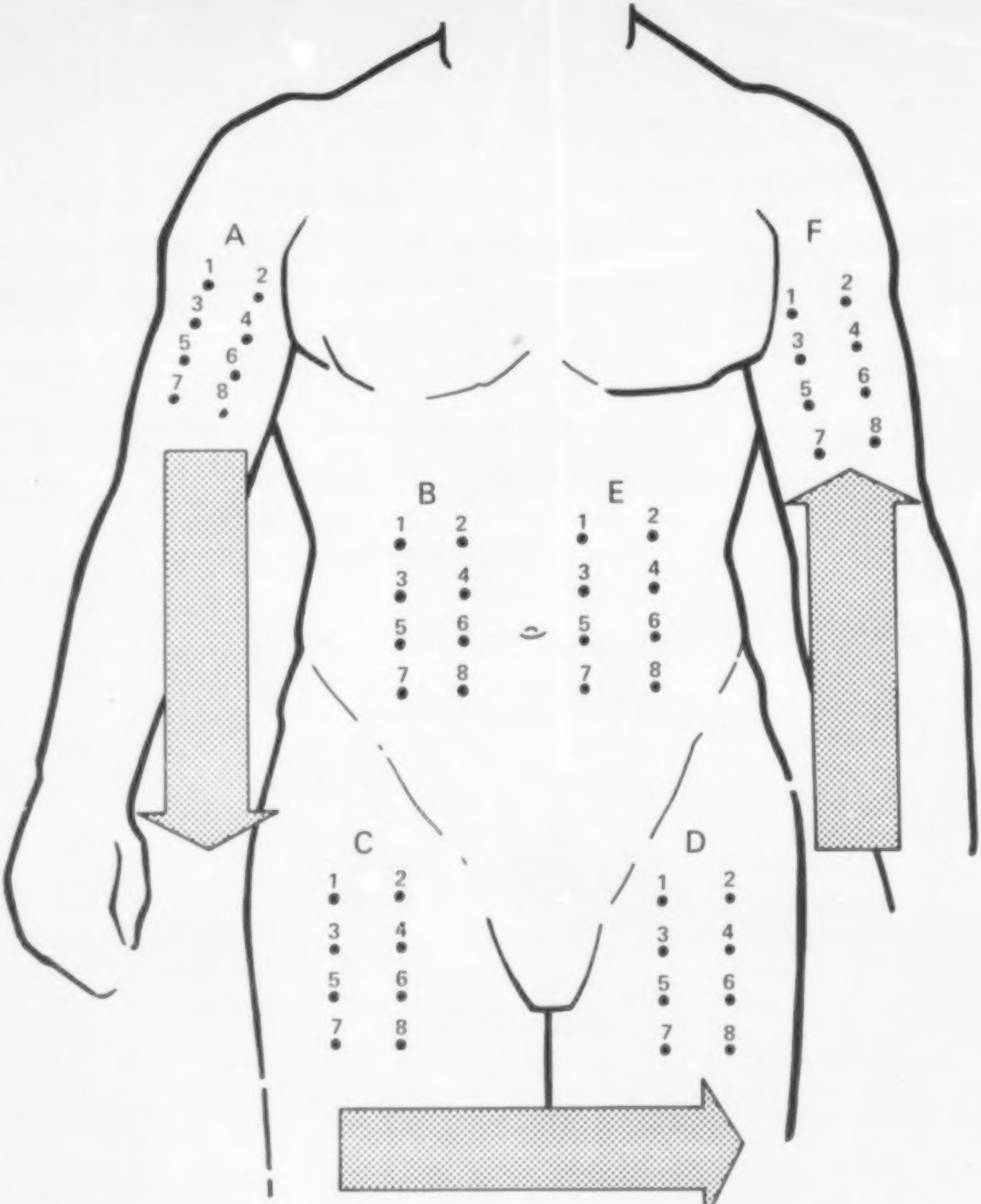

10
20
30
40U
1cc
10
20
30
40
50
60
70
80U

C. One-ml. (40 U. and 80 U./ml. Scales) Insulin Syringe



D. One-ml. (100 U./ml. Scale) Insulin Syringe

Rotating Insulin Injection Areas


A
1
2
3
4
5
6
7
8
F
1
2
3
4
5
6
7
8
B
1
2
3
4
5
6
7
8
E
1
2
3
4
5
6
7
8
C
1
2
3
4
5
6
7
8
D
1
2
3
4
5
6
7
8

ADMINISTRATION OF INSULIN
UNIT X

JOB SHEET #1–PREPARE INSULIN FOR INJECTION

I. Equipment

  A. Vials of insulin

  B. Insulin syringes with needles

  C. Cotton sponges

  D. Disinfectant

  E. Waste containers for used liquid from vials

  F. Medication order and card

II. Procedure

  A. Wash hands

  B. Assemble equipment

  C. Check to see that insulin is the correct strength to administer the prescribed dosage

  D. Select a syringe that corresponds to the unit/cc strength of the vial of insulin

  E. Rotate vial of insulin to insure even mixture of solution

  (CAUTION: Do not agitate vigorously.)

  F. Assemble syringe if necessary

  G. Check the dosage

    1. Read the medicine card

    2. Check the syringe and vial to be certain you are using the correct strength of insulin and proper syringe

  H. Wipe top of vial with cotton sponge and disinfectant

  I. Draw back plunger of syringe, drawing in a volume of air equal to the volume of insulin to be withdrawn from vial

  J. Push the needle of the syringe into the rubber cap of the vial

  K. Push air into the vial

JOB SHEET #1

L. Invert vial

M. Withdraw the required amount of insulin from the vial

N. Hold the plunger tightly with the little finger and pull the needle from the bottle

O. Check the dose again

   1. Read the medicine card

   2. Check the type of insulin and dose strength on the insulin bottle

   3. Check the medicine card with the dose in the syringe

P. Have another licensed person check the dose of insulin with

   1. Medication card

   2. Bottle from which insulin was drawn

   3. Insulin syringe containing the dose to be given

Q. Return insulin to the refrigerator

R. Care for equipment as instructed when procedure is completed

ADMINISTRATION OF INSULIN
UNIT X

JOB SHEET #2--TEST URINE FOR GLUCOSE AND ACETONE

I. Equipment

A. Clinitest® Urine Sugar Analysis Set

B. Diastix® Reagent Strips

C. Keto-Diastix ™ Reagent Strips

D. Tes-Tape®

E. Diabetic urine specimen

II. Procedure using Clinitest tablets

A. Collect urine in a clean receptacle

B. Place five drops of urine in test tube

C. Rinse dropper with water

D. Add ten drops of water

E. Drop one Clinitest tablet in test tube

F. Observe reaction as it is taking place

G. Do not agitate test tube during reaction nor for fifteen seconds after the boiling in the tube stops

H. Wait fifteen seconds and then shake test tube

I. Compare with the color chart included in the test kit

J. Record the amount of glucose present, using either a plus sign (+) or percent (%).

III. Procedure using Diastix and Keto-Diastix

A. Collect urine in a clean receptacle

B. Dip the Diastix or Keto-Diastix in the urine for two seconds

C. Read the ketone test on the Keto-Diastix at the end of fifteen seconds by comparing with the color blocks on the chart provided

D. Read the glucose test at the end of thirty seconds

E. Record the amount of glucose and/or acetone present

(CAUTION: When glucose in urine tests is one-half percent or more, it is recommended that the urine be tested for ketones also.)

JOB SHEET #2

F. Record the amount of glucose present

IV. Procedure using Tes-Tape

A. Collect urine in a clean receptacle

B. Dip Tes-Tape in urine

C. Dry for one minute

D. Compare with the color chart provided on the tape dispenser

(CAUTION: Do not lay the tape on the lavatory or a paper towel before reading it. Small amounts of glucose from another source may affect the accuracy of the test.)

E. Record the amount of glucose present

(NOTE: If in doubt about performing any of these tests, consult the manufacturers' directions. If the amount of glucose is over one-half percent, the test should be repeated.)

ADMINISTRATION OF INSULIN
UNIT X

TEST

1. Match the terms on the right to the correct definition.

   ______a. Active principle of secretion of the islands of Langerhans in the pancreas; hormone essential for metabolism of carbohydrates and fats

   ______b. Impairment of mental functioning severe enough to interfere with an individual's ability to meet the ordinary demands of life

   ______c. Weakness; lack of strength

   ______d. Excess of glucose in the blood

   ______e. Reduction of blood glucose below normal

   ______f. Severe generalized weakness, malnutrition, and emaciation

   ______g. Drugs which lower the blood sugar level

   ______h. Presence of glucose in the urine

   ______i. Presence of acetone or ketone bodies in the urine

   1. Oral hypoglycemics
   2. Acetonuria/ketonuria
   3. Hypoglycemia
   4. Glycosuria
   5. Hyperglycemia
   6. Cachexia
   7. Debility
   8. Psychosis
   9. Insulin

2. List three therapeutic uses of insulin.

   a.

   b.

   c.

3. Discuss the absorption and action of insulin.

4. List six general facts about insulin.

   a.

   b.

   c.

   d.

   e.

   f.

5. Name the type of insulin which can be given intravenously.

6. List types of insulin classified as to rate of action and the time when hypoglycemia is most apt to occur for each.

   a. Rapid action — Time hypoglycemia is most apt to occur

      1)

      2)

   b. Intermediate action

      1)

      2)

      3)

   c. Slow action

      1)

      2)

7. List three general facts about oral hypoglycemics.

   a.

   b.

   c.

8. List two advantages of oral hypoglycemics.

   a.

   b.

9. List two disadvantages of oral hypoglycemics.

   a.

   b.

10. List three oral hypoglycemic preparations.

    a.

    b.

    c.

11. Discuss the testing of urine for glucose.

12. Demonstrate the ability to:

    a. Prepare insulin for injection.

    b. Test urine for glucose and acetone.

    (NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

ADMINISTRATION OF INSULIN
UNIT X

ANSWERS TO TEST

1.

a.	9	d.	5	g.	1
b.	8	e.	3	h.	4
c.	7	f.	6	i.	2

2.
   a. Chiefly for treatment of diabetes mellitus

   b. Production of comatose state in some types of psychoses

   c. Stimulation of appetite in debilitated or cachectic patients

3. Discussion should include:

   a. Destroyed by the digestive juices so cannot be given orally

   b. Freely soluble in body fluids

   c. Absorbed rapidly from parenteral sites

   d. Increases the transport of glucose into the cells, particularly in muscular and fatty tissues

   e. Assists fat and protein metabolism

   f. Controls, with aid of diet, but does not cure diabetes mellitus

4. Any six of the following:

   a. Comes in ten milliliter vials clearly labeled with potency per ml, as 40, 80, or 100 units

   b. Only insulin syringes are used to administer insulin; syringe markings must correspond to strength of insulin

   c. Insulin dosages are individualized and are always prescribed by a physician

   d. Insulin and diet must be administered at prescribed times to avoid reactions of hypoglycemia and/or hyperglycemia

   e. All forms of insulin can be given subcutaneously, usually in the arms and thighs

   f. Site of injection should be rotated so that one site is not used more than once per month

g. Food intake, exercise, illness, and emotional stress will alter the amount of insulin needed

h. All forms of insulin should be refrigerated

i. All bottles of insulin are marked with an expiration date and should not be used after that date

5. Only Regular Insulin can be given intravenously

6.

a. Rapid action	Time hypoglycemia is most apt to occur
1) Regular Crystalline	Before lunch
2) Semilente	Before lunch
b. Intermediate action	
1) Globin	Late afternoon
2) NPH	Late afternoon
3) Lente	Late afternoon
c. Slow action	
1) Protamine Zinc	During night and early morning
2) Ultralente	During night and early morning

7. Any three of the following:

a. Used exclusively for treatment of patients with hyperglycemia

b. May be used alone or with injections of insulin

c. Synthetic compounds are not "oral insulin", but for many patients they eliminate the need for insulin and for others they permit lower insulin dosage

d. Diabetic diet and close medical supervision required during administration of oral hypoglycemics

8. Any two of the following:

a. Permits ease of administration

b. Promotes patient acceptance

c. Eliminates or decreases necessity of repeated injections

d. Permits utilization and/or stimulation of patient's insulin production

e. Need not be refrigerated

9. Any two of the following:

   a. Adverse reactions including severe hypoglycemia, skin rashes, or gastrointestinal disturbances

   b. Ineffective for certain diabetics

   c. Greater risk of self-medication and changing of dosage without consulting the physician

   d. More danger of toxicity with long term use than with insulin

10. Any three of the following:

    a. Dymelor or acetohexamide

    b. Diabinese or chlorpropamide

    c. Tolinase or tolazamide

    d. Orinase or tolbutamide

    e. DBI or phenformin

    f. DBI-TD or phenformin (delayed release form)

11. Discussion should include:

    a. Urine is usually tested four times a day, before meals and at bedtime

    b. Two urine specimens are collected at a thirty-minute interval, usually; the first specimen is discarded and the second specimen is tested

    c. Dosage of insulin is adjusted according to the amount of glucose in the urine and its time of appearance in relation to insulin injections and meals

    d. The physician usually requests a test for acetone when the urine contains glucose

    e. An accurate record of the results of urine tests must be kept

12. Performance skills will be evaluated to the satisfaction of the instructor.

OTHER METHODS FOR ADMINISTERING MEDICATIONS
UNIT XI

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list other ways of administering drugs, their purposes, and examples of each. The student should be able to demonstrate the ability to administer medications by each method. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with other methods of administering medications to the correct definitions.
2. List five purposes of local applications.
3. Discuss oral medications given sublingually and buccally, giving one example of each.
4. List method of application, purpose, and an example for each type of local application.
5. List three forms of rectal medications and a purpose and an example of each form.
6. Demonstrate the ability to:
    a. Administer sublingual and buccal medications.
    b. Apply ointment, lotion, or liniment; poultices or plasters.
    c. Apply medicated wet dressings.
    d. Administer a vaginal irrigation.
    e. Administer Aromatic Ammonia.
    f. Administer eye, ear, and nose medications.

OTHER METHODS FOR ADMINISTERING MEDICATIONS
UNIT XI

SUGGESTED ACTIVITIES

I. Instructor:
    A. Provide students with objective sheet.
    B. Provide students with information and job sheets.
    C. Discuss terminal and specific objectives.
    D. Discuss information sheet.
    E. Demonstrate and discuss procedures outlined on the job sheets.
    F. Give test.

II. Student:
    A. Read objectives.
    B. Study information sheet.
    C. Participate in discussion.
    D. Demonstrate the ability to perform the procedures outlined on the job sheets.
    E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:
    A. Objectives
    B. Information sheet
    C. Job sheets
        1. Job Sheet #1--Administer Sublingual and Buccal Medications
        2. Job Sheet #2--Apply Ointment, Lotion, or Liniment; Poultices or Plasters
        3. Job Sheet #3--Apply Medicated Wet Dressings
        4. Job Sheet #4--Administer a Vaginal Irrigation

5. Job Sheet #5--Administer Aromatic Ammonia

6. Job Sheet #6--Administer Eye, Ear, and Nose Medications

D. Test

E. Answers to test

II. References:

A. Dison Norma. *An Atlas of Nursing Techniques.* St. Louis, Missouri: The C.V. Mosby Company, 1975.

B. Rapier, Dorothy K., et al. *Practical Nursing.* St. Louis, Missouri: The C.V. Mosby Company, 1970.

C. Skelley, Esther G. *Medications and Mathematics for the Nurse.* Albany, New York: Delmar Publishers, 1974.

OTHER METHODS FOR ADMINISTERING MEDICATIONS
UNIT XI

INFORMATION SHEET

I. Terms and definitions

- A. Desensitization--Procedure or medication to lessen the reaction to painful stimuli
- B. Astringent--Agent that contracts or shrinks tissues or mucous membranes
- C. Antiseptic--Compound which stops or inhibits the growth of bacteria without necessarily killing them
- D. Counterirritant--Agent that produces inflammation of the skin for the relief of a more deep-seated inflammation
- E. Syncope--Temporary suspension of consciousness; fainting
- F. Aromatic Ammonia--Aromatic solution of ammonia and ammonium carbonate with a pungent odor
- G. Inunction--Act of rubbing an oily or fatty substance into the skin; substance to be applied to the skin
- H. Maceration--Softening of tissue from soaking
- I. Douche--Stream of solution or air directed to or into a body cavity
- J. Orifice--Opening or entrance into a cavity or tube
- K. Vaporole--Trade name for pearl or fragile ampoule of aromatic vapor
- L. Sublingual--Beneath the tongue
- M. Buccal--Pertaining to the cheek

II. Purposes of local applications

- A. Desensitization
- B. Astringent
- C. Antiseptic
- D. Counterirritant
- E. Systemic effect

INFORMATION SHEET

III. Oral medications which are not swallowed may be given sublingually or buccally

A. Only a few drugs can be absorbed in sufficient amounts through the sublingual or buccal mucous membranes

B. Medication is retained in the specified site until it is completely dissolved

C. The dissolved drug is absorbed by the capillaries of the selected site

D. Patient must be able to cooperate in order to retain the medication in the prescribed site

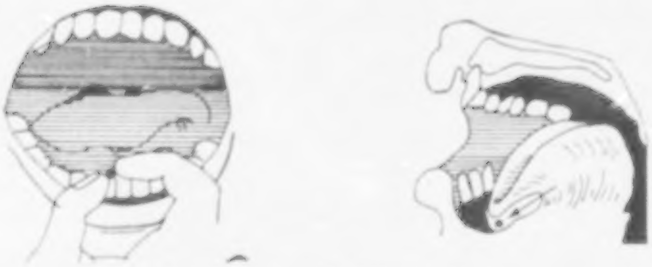
E. Some examples of medication include

1. Sublingual (Figure 1)

a. Nitroglycerine given to relieve pain and spasm of angina pectoris and some gallbladder dysfunctions

b. Isuprel® given to relax the smooth musculature of the bronchi and gastrointestinal system

FIGURE 1



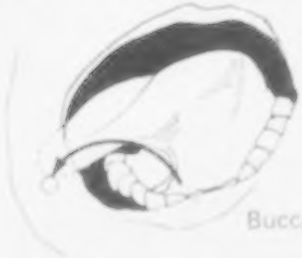
Sublingual administration

2. Buccal (Figure 2)

a. Linquets, one kind of male hormone

b. Pitocin® Citrate. Buccal given to induce labor in obstetrical patients

FIGURE 2



Buccal administration

IV. Types of local applications

Type	Method of Application	Some Purposes	Examples
A. Ointments	Directly on skin or spread on dressings	Relieve irritation Treatment of skin diseases	Zinc oxide A and D Ointment
B. Lotions	Swabbed on the skin	Antisepsis Astringent Relief of itching, dryness, or irritation	Calamine lotion Body lotions
C. Liniments	Rubbed on skin vigorously	Counterirritant Relief of soreness of muscles and joints	Camphor liniment
D. Medicated or wet dressings	Material saturated with medicated solution applied to affected area	Antisepsis Astringent Local treatment of skin disorders	Neomycin solution Saline solution
E. Poultices or plasters	Thin layer of drug mixed with resin, wax, or fatty substance and spread on cloth, prepared cloth applied to skin	Counterirritant Relief of pain and congestion in deeper tissues	Mustard plaster Flaxseed poultice
F. Irrigations or douches	Flow of solution through an infected wound or organ	Treat infection or inflammation Cleansing of affected part	Saline solution for nose and throat irrigations Saline, sodium bicarbonate, or hydrogen peroxide for ear irrigations
G. Instillations in eyes, ear or nose	By dropper or spray	For infection and/or inflammation	Eyes Neosporin Ophthalmic Solution Ears Cerumenex Drops Nose Neo-Synephrine Hydrochloride Intranasal solution

INFORMATION SHEET

V. Rectal medications

	FORM	SOME PURPOSES	EXAMPLES
A.	Suppositories	Relieve nausea	Dramamine Suppository
		Cathartic	Glycerine or Dulcolax Suppositories
		Relieve inflammation	Anugesic Suppository
		Sedation	Seconal Suppository
B.	Ointments	Analgesia	Xylocaine Ointment
		Treat infection	Medicone Unguent
C.	Liquids	Soften feces	Oil retention enema
		Sedation	Paraldehyde
		Emollient	Cornstarch solution

OTHER METHODS FOR ADMINISTERING MEDICATIONS
UNIT XI

JOB SHEET #1-ADMINISTER SUBLINGUAL AND BUCCAL MEDICATIONS

I. Equipment

A. Medication orders and card

B. Medication

C. Medicine cup

II. Procedure

A. Check medication order to determine site

B. Wash hands

C. Prepare medication

(NOTE: Medication in individually sealed packages should be opened at the patient's bedside.)

D. Identify patient and explain procedure

E. Instruct patient to retain medication in the prescribed site until it dissolves

F. Assist patient as necessary to place medicine in the prescribed site

G. Remain with patient until medication is dissolved

H. Replace equipment used

I. Wash hands

J. Record and report medication

K. Observe patient for reaction

L. Record observation

OTHER METHODS FOR ADMINISTERING MEDICATIONS
UNIT XI

JOB SHEET #2--APPLY OINTMENT, LOTION, OR LINIMENT; POULTICES OR PLASTERS

I. Equipment

   A. Medication order and card

   B. Medication

   C. Dressings, if ordered or required

   D. Sterile rubber gloves, if needed

   E. Tongue depressors, cotton swabs, or cotton balls

   F. Tray for equipment, if needed

II. Procedure

   (NOTE: Ointments are usually rubbed into the skin; lotions may be swabbed on with cotton swabs, applicators, or cotton balls or applied with the hands; liniments may be applied with as little rubbing as possible or may be massaged well to increase effect. Poultices and plasters should be used according to manufacturer's instructions.)

   A. Check medication order to determine

      1. If dressings are needed

      2. If sterile gloves are needed

      3. Method of application, as by hand or with swab or cotton balls

      4. If medication is to be applied sparingly or generously

   B. Wash hands

   C. Assemble equipment

   D. Identify patient and explain procedure

   E. Provide privacy

   F. Expose area to be treated

      (NOTE: Application of medicine should be made after bath unless otherwise specified.)

JOB SHEET #2

G. Apply medication as directed

H. Apply dressing if needed

I. Provide for patient's comfort

J. Wash hands

K. Replace equipment used

L. Record treatment

M. Observe for reaction

N. Record observations

OTHER METHODS FOR ADMINISTERING MEDICATIONS
UNIT XI

JOB SHEET #3-APPLY MEDICATED WET DRESSINGS

I. Equipment

  A. Medication order and card

  B. Medicated solution

  C. Basin

  D. Dressings

  E. Bed protector, as needed

  F. Gloves, as needed

  G. Tray for equipment

II. Procedure

  A. Check medication order

  B. Wash hands

  C. Prepare solution according to directions

  D. Assemble equipment

  E. Identify patient and explain procedure

  F. Provide privacy

  G. Place bed protectors as needed

  H. Position patient as needed for application of compresses

  I. Saturate dressing and press out excess moisture

  (NOTE: Dressing should be uniformly moistened but not wet enough to drip.)

  J. Place moistened dressings between the digits if an extremity is to be dressed; then proceed with wrapping the part loosely

  K. Provide additional cover as needed to keep the patient warm

  L. Check dressings often during treatment; remove and reapply as often as needed to maintain moisture

JOB SHEET #3

M. Observe affected area for maceration of the tissues or symptoms of irritation each time dressings are removed

N. Leave wet dressings uncovered unless otherwise ordered

O. Remove dressings at the end of treatment

P. Pat skin dry using as little friction as possible

Q. Apply dry dressing as required

R. Provide for patient's comfort

S. Return equipment to proper place

T. Wash hands

U. Record treatment

OTHER METHODS FOR ADMINISTERING MEDICATIONS
UNIT XI

JOB SHEET #4--ADMINISTER A VAGINAL IRRIGATION

I. Equipment

- A. Medication order and card
- B. Tray
- C. Irrigating container
- D. Tubing with clamp
- E. Douche tip
- F. Bath thermometer
- G. Solution no warmer than 105° F (40.6° C)
- H. Bedpan
- I. Rubber gloves
- J. Tissue wipes
- K. Bed protector

II. Procedure

- A. Check medication order
- B. Wash hands
- C. Identify patient and explain procedure
- D. Provide privacy
- E. Have patient void

  (NOTE: A full bladder may cause distress or interfere with the irrigation.)
- F. Wash hands
- G. Assemble equipment
- H. Place patient on bedpan in reclining position
- I. Cleanse vulva by flowing approximately 150 cc over the area

JOB SHEET #4

J. Insert douche tip into vagina approximately two inches

(NOTE: Patient may hold douche tip if there are no contraindications.)

K. Hold the lower portion of the irrigating container about one foot (30 cm) above the vaginal orifice

L. Remove douche tip after all solution has been used

M. Elevate patient's bed, if permitted, to facilitate the return flow of fluid

N. Remove bedpan

O. Dry patient's vulva

P. Place bed protector under patient

Q. Provide for patient's comfort

R. Clean and return equipment to proper place

S. Wash hands

T. Record procedure

OTHER METHODS FOR ADMINISTERING MEDICATIONS
UNIT XI

JOB SHEET #5--ADMINISTER AROMATIC AMMONIA

I. Equipment

   A. Vaporole of Ammonia Aromatic (Figure 1)

   B. Gauze 4 x 4s

II. Procedure

   (NOTE: Vaporoles of Ammonia Aromatic are used as emergency treatment of patient who has fainted or is feeling faint.)

   A. Assemble equipment

   B. Crush vaporole in one or two 4 x 4s at patient's bedside (Figure 2)

   C. Pass saturated gauze slowly back and forth near patient's nose as necessary (Figure 3)

   D. Discard crushed vaporole after use

   E. Report and record syncope, treatment, and response to treatment

FIGURE 1

FIGURE 2

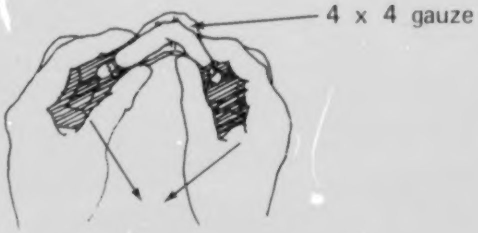
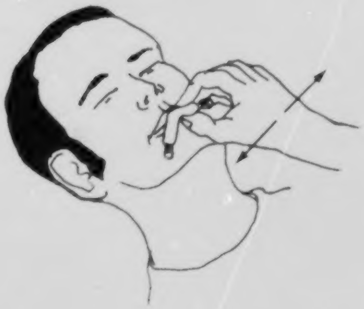


FIGURE 3



OTHER METHODS FOR ADMINISTERING MEDICATIONS
UNIT XI

JOB SHEET #6--ADMINISTER EYE, EAR, AND NOSE MEDICATIONS

I. Equipment

- A. Medication order and card
- B. Medication
- C. 4 x 4s or tissue wipes
- D. Tray

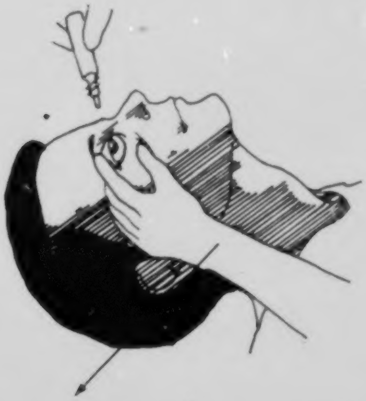
II. Procedures for eye medications

- A. Check medication card for special instructions

  (NOTE: Determine amount of medication to be used and whether instillation is for one or both eyes.)

- B. Wash hands
- C. Assemble equipment
- D. Identify patient and explain procedure
- E. Position patient for ease of instillation
- F. Separate eyelids with fingers of one hand, holding a 4 x 4 or tissue to absorb excess fluid or ointment; do not press on eyeball (Figure 1)

FIGURE 1

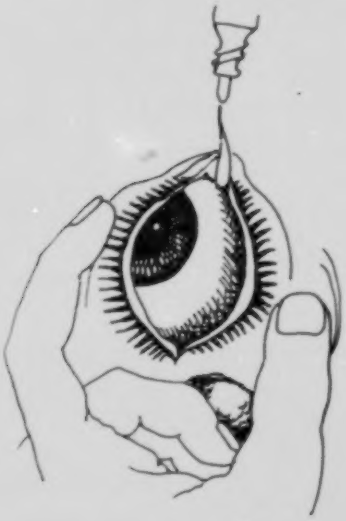


JOB SHEET #6

G. Have patient look toward the top of his head to remove the sensitive cornea from the point of instillation

H. Place prescribed drops near inner canthus if drops are used, or place line of ointment along lower eyelid; do not allow dispenser to touch the eye (Figure 2)

FIGURE 2



I. Have patient close eye

J. Apply dressing, if directed

K. Provide for patient's comfort

L. Return equipment to proper place

M. Wash hands

N. Record treatment

III. Procedure for ear medications

A. Check medication card for special instructions

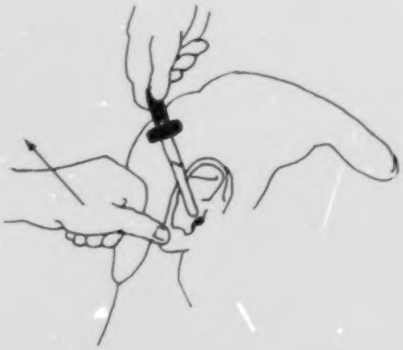
B. Wash hands

C. Assemble equipment

JOB SHEET #6

D. Position patient by turning head so that the ear being treated faces upward (Figure 3)

FIGURE 3

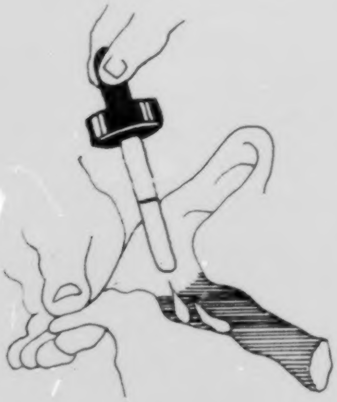


E. Hold external ear gently to expose the orifice

  1. For an adult, pull pinna up and back
  2. For a child, pull lobe down and back

F. Drop the medication against the internal wall of the canal (Figure 4)

FIGURE 4



G. Place small cotton ball in outer ear to cover orifice

H. Provide for patient's comfort

I. Return equipment to proper place

JOB SHEET #6

J. Wash hands

K. Record treatment

IV. Procedure for nose instillations

A. Check medication card for special instructions

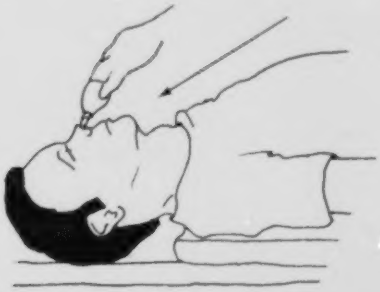
B. Wash hands

C. Assemble equipment

D. Identify patient and explain procedure

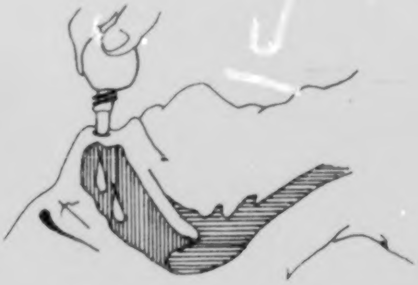
E. Tilt patient's head back by elevating the shoulders with a pillow or by having the patient hang his head over the edge of the bed (Figure 5)

FIGURE 5



F. Instill prescribed amount (Figure 6)

FIGURE 6



G. Provide for patient's comfort

H. Return equipment to proper place

I. Wash hands

J. Record treatment

OTHER METHODS FOR ADMINISTERING MEDICATIONS
UNIT XI

TEST

1. Match the terms on the right to the correct definition.

_____a. Procedure or medication to lessen the reaction to painful stimuli

_____b. Agent that contracts or shrinks tissues or mucous membranes

_____c. Compound which stops or inhibits the growth of bacteria without necessarily killing them

_____d. Agent that produces inflammation of the skin for the relief of a more deep-seated inflammation

_____e. Temporary suspension of consciousness; fainting

_____f. Aromatic solution of ammonia and ammonium carbonate with a pungent odor

_____g. Act of rubbing an oily or fatty substance into the skin; substance to be applied to the skin

_____h. Softening of tissue from soaking

_____i. Stream of water or air directed to or into a body cavity

_____j. Opening or entrance into a cavity or tube

_____k. Trade name for pearl or fragile ampoule of aromatic vapor

_____l. Pertaining to the cheek

_____m. Beneath the tongue

1. Syncope
2. Orifice
3. Maceration
4. Buccal
5. Douche
6. Aromatic Ammonia
7. Desensitization
8. Vaporole
9. Sublingual
10. Astringent
11. Counterirritant
12. Antiseptic
13. Inunction

2. List five purposes of local applications.

   a.

   b.

   c.

   d.

   e.

3. Discuss oral medications given sublingually and buccally, giving one example of each.

4. List method of application, purpose, and an example for each type of local application listed below.

	Method of Application	Purpose	Example
a. Ointments			
b. Lotions			
c. Liniments			
d. Medicated or wet dressings			
e. Poultices or plasters			
f. Irrigations or douches			
g. Instillations in eyes, ears, or nose			

5. List three forms of rectal medications and a purpose and an example of each.

a.

b.

c.

6. Demonstrate the ability to:

   a. Administer sublingual and buccal medications.

   b. Apply ointment, lotion, or liniment; poultices or plasters.

   c. Apply medicated wet dressings.

   d. Administer a vaginal irrigation.

   e. Administer Aromatic Ammonia.

   f. Administer eye, ear, and nose medications.

   (NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

OTHER METHODS FOR ADMINISTERING MEDICATIONS
UNIT XI

ANSWERS TO TEST

1. a. 7
   b. 10
   c. 12
   d. 11
   e. 1
   f. 6
   g. 13
   h. 3
   i. 5
   j. 2
   k. 8
   l. 4
   m. 9

2. a. Desensitization
   b. Astringent
   c. Antiseptic
   d. Counterirritant
   e. Systemic effect

3. Discussion should include:
   a. Only a few drugs can be absorbed in sufficient amounts through the sublingual or buccal mucous membranes
   b. Medication is retained in the specified site until it is completely dissolved
   c. The dissolved drug is absorbed by the capillaries of the selected site
   d. Patient must be able to cooperate in order to retain the medication in the prescribed site
   e. One example from each group
      1) Sublingual
         a) Nitroglycerine given to relieve pain and spasm of angina pectoris and some gallbladder dysfunctions
         b) Isuprel® given to relax the smooth musculature of the bronchi and gastrointestinal system
      2) Buccal
         a) Linguets, one kind of male hormone
         b) Pitocin® Citrate, Buccal given to induce labor in obstetrical patients

4. Answer should include one method, purpose, and example for each type of local application.

	Type	Method of Application	Some Purposes	Examples
a.	Ointments	Directly on skin or spread on dressings	Relieve irritation Treatment of skin diseases	Zinc oxide A and D Ointment
b.	Lotions	Swabbed on the skin	Antisepsis Astringent Relief of itching, dryness, or irritation	Calamine lotion Body lotions
c.	Liniments	Rubbed on skin vigorously	Counterirritant Relief of soreness of muscles and joints	Camphor liniment
d.	Medicated or wet dressings	Material saturated with medicated solution applied to affected area	Antisepsis Astringent Local treatment of skin disorders	Neomycin solution Saline solution
e.	Poultices or plasters	Thin layer of drug mixed with resin, wax, or fatty substance and spread on cloth; prepared cloth applied to skin	Counterirritant Relief of pain and congestion in deeper tissues	Mustard plaster Flaxseed poultice
f.	Irrigations or douches	Flow of solution through an infected wound or organ	Treat infection or inflammation Cleansing of affected part	Saline solution for nose and throat irrigations Saline, sodium bicarbonate, or hydrogen peroxide for ear irrigations
g.	Instillations in eyes, ear or nose	By dropper or spray	For infection and/or inflammation	Eyes--Neosporin Ophthalmic Solution Ears--Cerumenex Drops Nose--Neo-Synephrine Hydrochloride Intranasal solution

5. Answer should include names of all three forms of rectal medications and one purpose and one example for each form.

	FORM	SOME PURPOSES	EXAMPLES
a.	Suppositories	Relieve nausea	Dramamine Suppository
		Cathartic	Glycerine or Dulcolax Suppositories
		Relieve inflammation	Anugesic Suppository
		Sedation	Seconal Suppository
b.	Ointments	Analgesia	Xylocaine Ointment
		Treat infection	Medicone Unguent
c.	Liquids	Soften feces	Oil retention enema
		Sedation	Paraldehyde
		Emollient	Cornstarch solution

6. Performance skills will be evaluated to the satisfaction of the instructor.

CHARTING MEDICATIONS
UNIT XII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to chart medications. This knowledge will be evidenced by demonstration throughout the program and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. List six items that are charted after giving oral medications.
2. List ten items to be charted after administering suppositories.
3. List seven items that are recorded after giving a subcutaneous or intramuscular injection.
4. List seven items that are charted after the administration of an intravenous infusion.
5. List seven items concerning narcotics or sedatives which are recorded on the narcotic record and seven items recorded on the patient's chart.
6. List two types of information to chart when a medication is not given.
7. Demonstrate the ability to chart medications.

CHARTING MEDICATIONS
UNIT XII

SUGGESTED ACTIVITIES

I. Instructor:

- A. Provide students with objective sheet.
- B. Provide students with information and assignment sheets.
- C. Discuss terminal and specific objectives.
- D. Discuss information and assignment sheets.
- E. Review general rules for charting.
- F. Provide students with necessary chart pages for charting medications and recording narcotics.
- G. Assist students with assignment sheet.
- H. Give test.

II. Student:

- A. Read objectives.
- B. Study information sheet.
- C. Participate in discussion.
- D. Complete assignment sheet.
- E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

- A. Objectives
- B. Information sheet
- C. Assignment Sheet #1--Chart Medications
- D. Test
- E. Answers to test

II. References:

A. Kozier, Barbara B. and Beverly DuGas. *Fundamentals of Patient Care.* Philadelphia, Pennsylvania: W.B. Saunders Company, 1967.

B. *Lesson Plans: Pharmacology.* Tennessee State Board for Vocational Education, 1970.

CHARTING MEDICATIONS
UNIT XII

INFORMATION SHEET

I. Items charted after giving oral medications
  A. Drug
  B. Dose
  C. Time given
  D. Reaction, if any
  E. Reason for giving PRN medication
  F. Initials of nurse giving medication

II. Items charted after administering suppositories
  A. Drug
  B. Dose
  C. Instructions to patient
  D. Time given
  E. Site of insertion
  F. Time retained
  G. Results
  H. Reaction
  I. Reason for giving PRN medication
  J. Initials of nurse giving medication

III. Items recorded after giving subcutaneous or intramuscular injections
  A. Drug
  B. Dose
  C. Time given
  D. Method and site of administration
  E. Reaction
  F. Reason for giving PRN medication
  G. Initials of nurse giving medication

INFORMATION SHEET

IV. Items charted after administration of intravenous infusion

- A. Amount and kind of solution
- B. Time started
- C. Site and rate of administration
- D. Time discontinued
- E. Total amount taken
- F. Reaction
- G. Name of person who started and discontinued IV

V. Items reported concerning narcotics or sedatives

- A. On narcotic or sedative record
    1. Name of drug
    2. Dose
    3. Time
    4. Name of patient
    5. Name of physician
    6. Signature of nurse
    7. Any medication destroyed or wasted
- B. On patient's record
    1. Drug
    2. Dose
    3. Method of administration
    4. Time given
    5. Reaction
    6. Reason for giving PRN medication
    7. Initials of nurse giving medication

INFORMATION SHEET

VI. Information to chart when medication is not given

  A. Usual information concerning medication

  B. Reason for not giving medication

CHARTING MEDICATIONS
UNIT XII

ASSIGNMENT SHEET #1--CHART MEDICATIONS

Mrs. Jane Simmons is a thirty-three-year-old patient admitted for a cholecystectomy due to chronic cholecystitis. You are working the 7 - 3 shift, giving medications. Chart the medications for which you are responsible.

DATE	DOCTOR'S ORDERS	MEDICATIONS GIVEN	
9-2	NPO after midnight		
	Dalmane 30 mg p o for sleep	Dalmane 30 mg	9:00 pm
	Demerol 100 mgm IM for pre-op		
	Atropine 1/150 gr on call		
	Adrenosem 1 amp IM stat	Adrenosem 1 amp	4:45 pm
	Aquamephyton 1 amp	Aquamephyton 1 amp	
9-3		Demerol 100 mg	8:30 am
	Post-op orders	Atropine 1/150 gr	
	NPO except sips of water		
	Wycillin 600,000 U IM q 24 hrs	Wycillin 600,000U	1:00 pm
	Demerol 50-100 mg IM prn pain	Demerol 50 mg IM	3:15 pm
	Vistaril 25-50 mg IM prn nausea		and 7:45 pm
	Serax 10 mg qid po	Vistaril 25 mg IM	5:45 pm
	Follow 1000 cc 5% glucose in	Serax 10 mg	8-12-4-8
	water with 1000 cc 5%/NaCl	1000 cc 5% glucose in	
	over 8 hour period	water finished at	4:10 pm
	Urecholine 10 mg tab 1 if unable	1000 cc 5%/NaCl added,	
	to void	finished at	12:15 am
	4:45 pm	Urecholine 10 mg	7:30 pm
	Adrenosem 1 amp IM stat	Adrenosem 1 amp	4:55 pm
	Aquamephyton 1 amp	Aquamephyton 1 amp	
9-4		Wycillin 600,000U IM	1:00 pm
		Demerol 50 mg	9:00 am
			and 1:30 pm
		Serax 10 mg	8-12-4-8
9-5	Sigtab 1 daily p o	Wycillin 600,000U IM	1:00 pm
	Pericolace 1 c noon meal		
	Entozyme 1 with each meal	Demerol 50 mg	9:00 am
	starting 9-6	Serax 10 mg	8-12-4-8
		Sigtab 1	12 noon
		Pericolace 1	12 noon

ASSIGNMENT SHEET #1

DATE	DOCTOR'S ORDERS	MEDICATIONS GIVEN	
9-6	Urecholine 10 mg q4h	Wycillin 600,000U IM	1:00 pm
		Serax 10 mg	8-12-4-8
		Sigtab 1	12 noon
		Pericolace 1	12 noon
		Urecholine 10 mg	8-12-4-8
9-7	DC Wycillin	Serax 10 mg	8-12-4-8
	Dalmane 30 mg at HS	Sigtab 1	12 noon
		Pericolace 1	12 noon
		Urecholine 10 mg	8-12-4-8

CHARTING MEDICATIONS
UNIT XII

TEST

1. List six items that are charted after giving oral medications.

   a.

   b.

   c.

   d.

   e.

   f.

2. List ten items to be charted after administering suppositories.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

   i.

   j.

3. List seven items that are recorded after giving a subcutaneous or intramuscular injection.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

4. List seven items that are charted after the administration of an intravenous infusion.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

5. List seven items concerning narcotics or sedatives which are recorded on the narcotic record and seven items recorded on the patient's chart.

   a. On narcotic record

      1)

      2)

      3)

      4)

      5)

      6)

      7)

   b. On patient's record

      1)

      2)

      3)

      4)

      5)

      6)

      7)

6. List two types of information to chart when a medication is not given.

   a.

   b.

7. Demonstrate the ability to chart medications.

   (NOTE: If this has not been accomplished prior to the test, ask the instructor *when the above activity should be completed.)*

CHARTING MEDICATIONS
UNIT XII

ANSWERS TO TEST

1. a. Drug
   b. Dose
   c. Time given
   d. Reaction, if any
   e. Reason for giving PRN medication
   f. Initials of nurse giving medication
2. a. Drug
   b. Dose
   c. Instructions to patient
   d. Time given
   e. Site of insertion
   f. Time retained
   g. Results
   h. Reaction
   i. Reason for giving PRN medication
   j. Initials of nurse giving medication
3. a. Drug
   b. Dose
   c. Time given
   d. Method and site of administration
   e. Reaction
   f. Reason for giving PRN medication
   g. Initials of nurse giving medication
4. a. Amount and kind of solution
   b. Time started

- c. Site and rate of administration
- d. Time discontinued
- e. Total amount taken
- f. Reaction
- g. Name of person who started and discontinued IV

5. a. On narcotic record
    1) Name of drug
    2) Dose
    3) Time
    4) Name of patient
    5) Name of physician
    6) Signature of nurse
    7) Any medication destroyed or wasted

   b. On patient's record
    1) Drug
    2) Dose
    3) Method of administration
    4) Time given
    5) Reaction
    6) Reason for giving PRN medication
    7) Initials of nurse giving medication

6. a. Usual information concerning medication

   b. Reason for not giving medication

7. Evaluated to the satisfaction of the instructor.

SURGICAL ASEPSIS
UNIT I

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to handle sterile equipment without contaminating it. The student should be able to apply dressings and list techniques used for disinfection and/or sterilization of all types of equipment. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with surgical asepsis to the correct definitions.
2. List three techniques important to medical asepsis.
3. List three techniques important to surgical asepsis.
4. Discuss the reasons for maintaining aseptic techniques.
5. List ten general principles of surgical asepsis.
6. List four methods of sterilization.
7. Describe the transfer forceps.
8. List six instructions for using transfer forceps.
9. List five general instructions concerning dressing changes.
10. Identify instruments used for dressing changes.
11. List five reasons for applying dressings.
12. Demonstrate the ability to:
    a. Use surgical supplies.
    b. Apply a simple dressing.
    c. Put on sterile gloves.

SURGICAL ASEPSIS
UNIT I

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and job sheets.

   C. Make transparencies.

   D. Discuss terminal and specific objectives.

   E. Discuss information sheet.

   F. Discuss surgical aseptic technique in your institution.

   G. Demonstrate and discuss procedures outlined on the job sheets.

   H. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Demonstrate the ability to accomplish the procedures outlined on the job sheets.

   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Transparency masters

      1. TM 1--Some Instruments Used for Dressing Changes

      2. TM 2--Some Instruments Used for Dressing Changes (Continued)

      3. TM 3--Some Instruments Used for Dressing Changes (Continued)

D. Job sheets

1. Job Sheet #1—Use Surgical Supplies

2. Job Sheet #2—Apply a Simple Dressing

3. Job Sheet #3—Put on Sterile Gloves

E. Test

F. Answers to test

II. References:

A. Rapier, Dorothy L. et al. *Practical Nursing.* St. Louis, Missouri: The C. V. Mosby Company, 1970.

B. Fuerst, Elinor V. et al. *Fundamentals of Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1974.

C. Rasmussen, Sandra. *Foundations of Practical and Vocational Nursing.* New York: The Macmillan Company, 1967.

D. Sutton, Audrey L. *Bedside Nursing Techniques in Medicine and Surgery.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

E. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

F. Ohio Trade and Industrial Education Service. *Nursing Procedures for the Practical Nurse.* Columbus, Ohio: Division of Vocational Education, State Department of Education, 1969.

III. Filmstrips:

A. "Infection Control." Concept Media.

B. "Sterile Technique and Dressing Change." Trainex Corporation.

SURGICAL ASEPSIS
UNIT I

INFORMATION SHEET

I. Terms and definitions

A. Medical asepsis--Procedures used to protect the patient and his environment from the transmission of disease-producing organisms from one person to another

B. Surgical asepsis--Procedures used to keep objects or areas sterile or completely free of all microorganisms

C. Clean (as applied to medical asepsis)--All gross contamination and many microorganisms have been removed

D. Sterile (as applied to surgical technique)--Free of all microorganisms and spores

E. Autoclave--Apparatus for sterilizing objects using steam under pressure

F. Forceps--Surgical instrument with two opposing blades or limbs controlled by handles

G. Sterilization--Process of destroying all microorganisms on a substance by exposure to chemical or physical agents

H. Disinfection--Destruction of infection-producing organisms

(NOTE: Heat and certain other physical agents such as live steam can be termed disinfectants. In common usage, however, the term disinfection usually refers to the use of chemical solutions to destroy pathogens. Sterilization usually refers to the procedure of boiling or autoclaving materials.)

II. Techniques important to medical asepsis

A. Sterilization or disinfection of articles to destroy unknown organisms

(NOTE: This includes sterilization or disinfection of any article after use by one patient and before it is used for another.)

B. Sterilization or disinfection of articles to destroy known organisms

(NOTE: This includes sterilizing or disinfecting articles from a patient with an infection or communicable disease.)

C. Correct handwashing

INFORMATION SHEET

III. Techniques important to surgical asepsis

- A. Sterilization of articles used in the operating room and delivery room
- B. Maintenance of sterility of articles used when carrying out procedures in any area of the health care institution including
  - 1. Changing or applying dressings
  - 2. Administering injections or intravenus infusions
  - 3. Catheterization of patients
- C. Scrubbing of hands and/or arms

IV. Reasons for maintaining aseptic techniques

- A. Failure to be exacting and meticulous is not readily detectable

  (NOTE: Aseptic techniques are only as good as the most careless person performing them. Breaks in technique endanger other personnel as well as the patient.)
- B. Because of the widespread and indiscriminate use of antibiotics, many antibiotic-resistant strains of bacteria are developing
- C. Some strains of microorganisms can survive for months or years in dust and bedding, especially in blankets or mattresses
- D. Some disease-producing organisms can be present in the nasal passages or on the skin of patients and personnel without causing any clinical symptoms
- E. Disease-producing organisms can be carried from one patient to another on improperly cleaned utensils such as thermometers or emesis basins
- F. The most susceptible persons are newborn infants, debilitated patients, and patients who have breaks in the skin such as surgical wounds or needle pricks from the administration of intravenous fluids
- G. It is the nursing team's responsibility to maintain its own aseptic techniques and to stress the importance of aseptic techniques to other hospital personnel, patients, and visitors

V. General principles of surgical asepsis

- A. Start with clean hands
- B. Handle sterile equipment only with sterile equipment

  Example: Sterile dressings must be handled with sterile forceps or sterile gloves to maintain sterility

INFORMATION SHEET

C. Establish a sterile field or area for receiving all sterile equipment and supplies

D. Maintain the sterile field

1. Keep it dry
2. Do not reach over it
3. Do not brush against it or allow your uniform to touch it
4. Do not turn your back to an uncovered sterile field
5. Do not cough or sneeze over a sterile field

E. Open sterile packages in such a way as to keep the inside of the wrapper and the contents sterile

F. Open sterile packages near the time of use; exposure to air and unnecessary handling increases the danger of contamination

G. Do not remove sterile objects from a sterile container with anything but a sterile instrument

H. Do not touch unsterile articles with sterile transfer forceps or sterile gloves; to do so contaminates the forceps or gloves

I. Open sterile containers properly

J. Cannot sterilize skin; it can only be cleaned

K. Consider the parts of the body not exposed to the outside as sterile

L. Hold the corners of the wrapper securely, when unwrapping bundles, so that the corners do not touch the sterile field

M. Avoid moisture on the sterile field; moisture permits transfer of microorganisms through a piece of cloth or paper

N. Never return materials to a sterile container

O. Avoid touching the bottle to the container or material receiving the solution when pouring solutions

P. Consider an article unsterile if there is any doubt about its sterility

INFORMATION SHEET

VI. Methods of sterilization

A. Boiling

(NOTE: This method destroys most organisms, but not spores, in ten minutes.)

B. Autoclaving

(NOTE: Exposure to steam for fifteen minutes at eighteen pounds pressure and 257° F kills all organisms including spores.)

C. Chemical disinfection

(NOTE: Time varies with disinfectant used.)

D. Dry heat

(NOTE: Hot air sterilization or gas sterilization involves the use of equipment similar to an ordinary baking oven.)

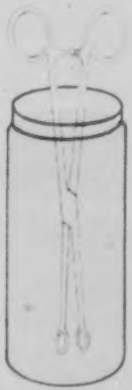
VII. Transfer forceps

A. Long forceps with a broad tip; a sponge forceps or similar instrument often used to handle sterile articles

B. Usually kept in a tall, wide-mouthed glass or metal container of antiseptic solution

C. Forceps and container are sterilized by autoclave or chemical disinfection

D. Container should have enough solution to cover at least two-thirds of the forceps



INFORMATION SHEET

VIII. Instructions for using transfer forceps

A. Keep only one forceps in each container

(NOTE: When two forceps are kept in a container, it is difficult to remove one without touching the unsterile portion of the other.)

B. Keep the sterile tips of the forceps tightly together when lifting them from or returning them to the container

C. Keep the tips always pointed downward to prevent the solution from running onto the unsterile portion and then back onto the sterile part

D. Avoid touching the rim or outside of the forceps container as well as the outside of other containers of sterile materials

E. Resterilize the forceps and container at regular intervals; always resterilize if forceps touch anything unsterile

F. Use only to transfer sterile supplies; do not use them to apply a dressing to a patient

G. Remember only the part of the transfer forceps covered by the solution in the forceps container is sterile

H. Drop sterile articles onto the sterile field; transfer forceps are not to touch the field

I. Remember the outer edge of approximately one inch of the prepared field is considered contaminated; keep sterile articles inside this margin

IX. General instructions concerning dressing changes

A. Dressing changes are made by the doctor unless otherwise ordered

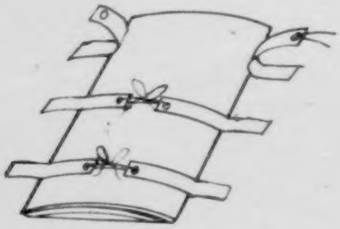
B. Patient's dressing should be observed to determine what is needed to replace it

C. All needed equipment should be assembled before removing the soiled dressing

(NOTE: Fluffy, loosely packed dressings are more absorbent and permit circulation of air. This type is usually used on draining wounds.)

INFORMATION SHEET

D. Use of straps to secure dressings is advisable if frequent dressing changes are necessary



E. Binders may be needed to secure dressings in place if adhesive tape cannot be used

F. Frequency of dressing changes is influenced by

1. Type of wound
2. Amount of drainage
3. Physician's preference
4. Condition of dressing

   (CAUTION: A dressing which becomes wet provides an avenue for passage of bacteria.)

X. Instruments used for dressing changes (Transparencies 1 through 3)

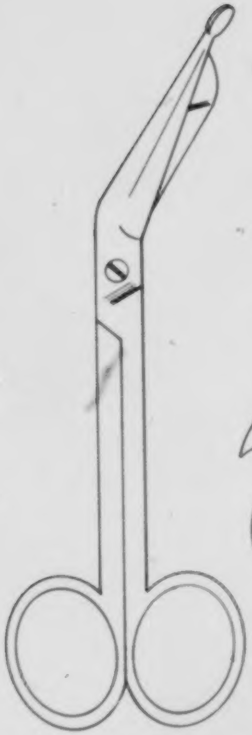
A. Bandage scissors
B. Straight surgical scissors
C. Curved surgical scissors
D. Transfer forceps
E. Plain thumb forceps
F. Rattooth thumb forceps
G. Groove director
H. Probe
I. Curbed hemostat
J. Straight hemostat
K. Scalpel

INFORMATION SHEET

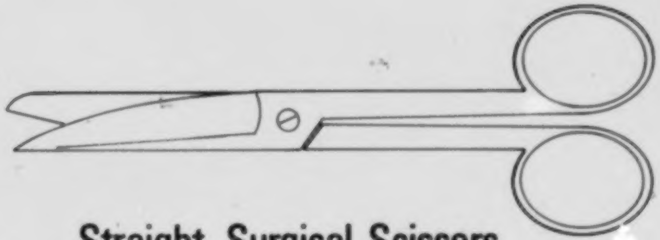
XI. Reasons for applying dressings

- A. Prevent contamination
- B. Protect wound from further injury
- C. Apply medication
- D. Apply pressure to keep edges of wound together
- E. Absorb drainage
- F. Promote healing

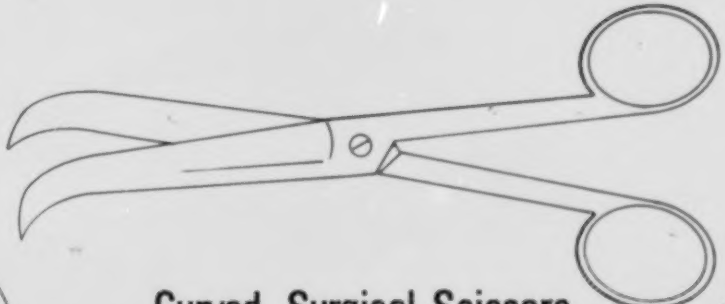
Some Instruments Used for Dressing Changes



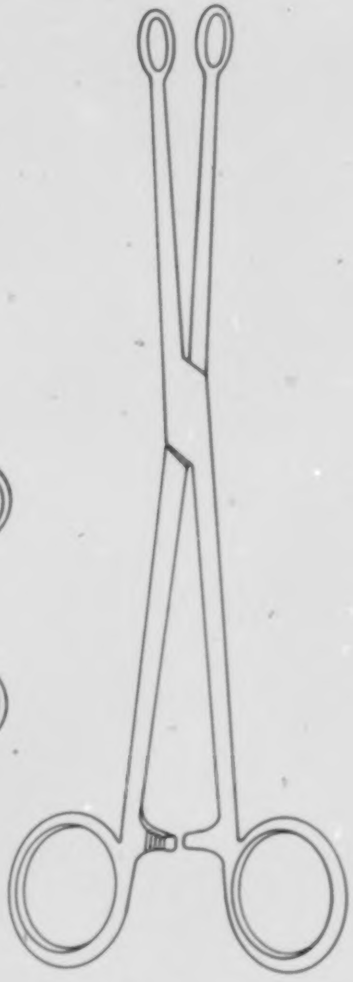
Bandage Scissors



Straight Surgical Scissors



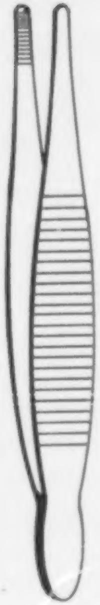
Curved Surgical Scissors



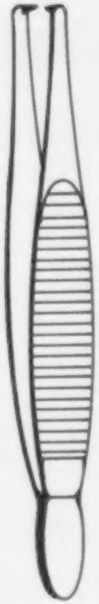
Transfer Forceps

Some Instruments Used for Dressing Changes

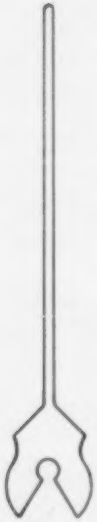
(Continued)



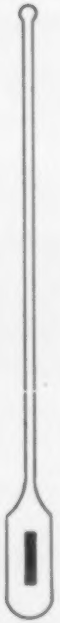
Plain
Thumb Forceps



Rattooth
Thumb Forceps



Groove Director



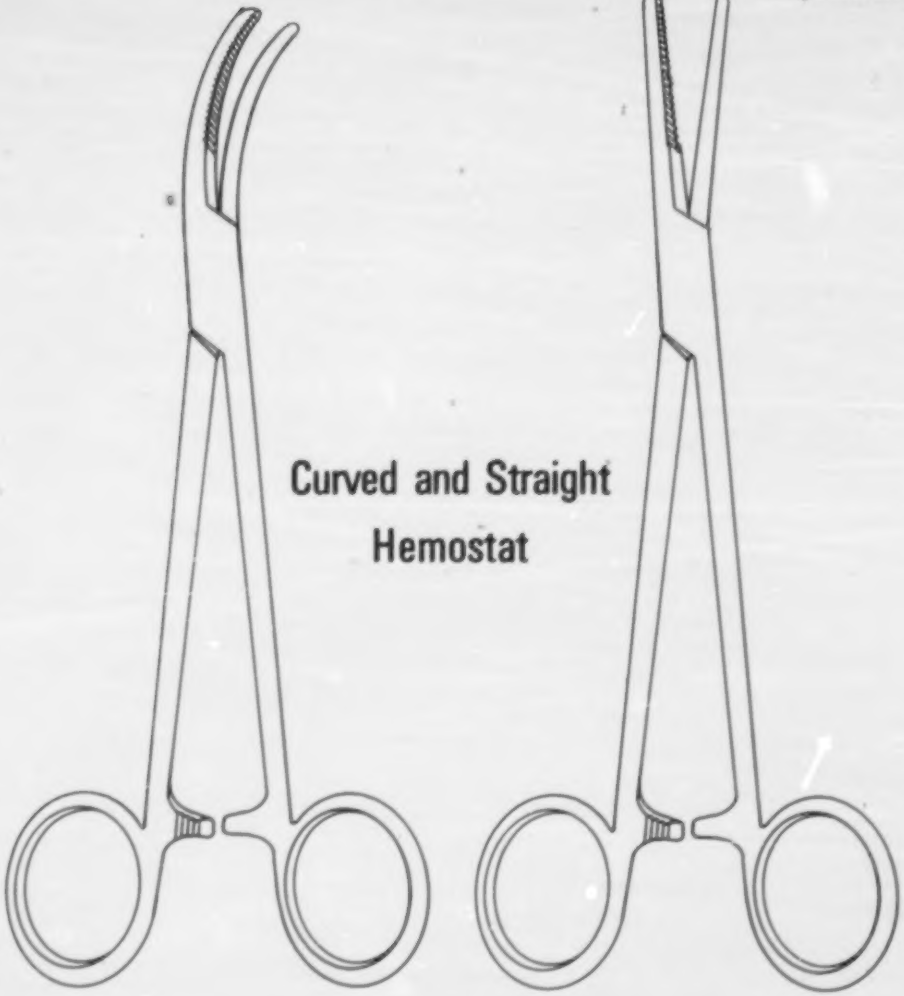
Probe

TM 2

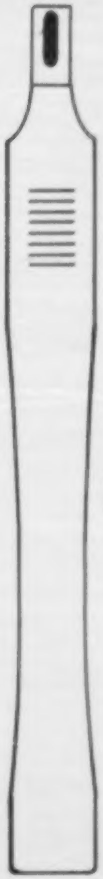
N II · 15-B

Some Instruments Used for Dressing Changes

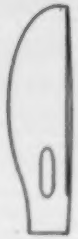
(Continued)



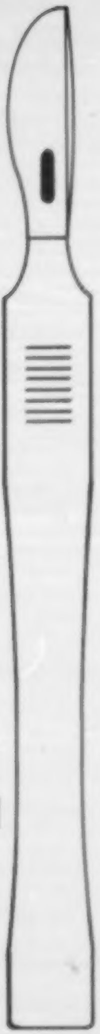
Curved and Straight Hemostat



Handle



Blade



Scalpel Assembled

SURGICAL ASEPSIS
UNIT I

JOB SHEET #1--USE SURGICAL SUPPLIES

I. Equipment

  A. Transfer forceps

  (NOTE: Transfer forceps may also be called handling forceps, lifting forceps, or pick-up forceps.)

  B. Forceps container with disinfectant

  C. Containers of sterile supplies

    1. Sterile towels and/or tray covers

    2. 4 x 4s

    3. Cotton balls

    4. Applicators or swabs

    5. Instruments

II. Procedure for using transfer forceps

  A. Wash hands

  B. Remove transfer forceps from container

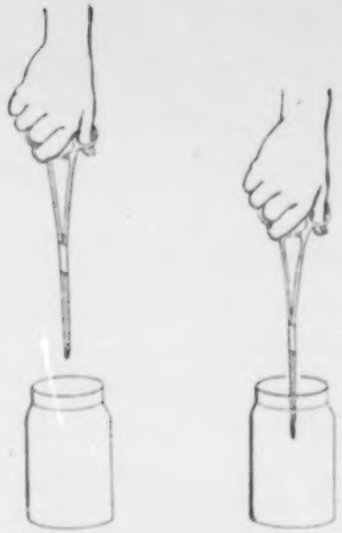
    1. Withdraw forceps vertically, taking care not to touch the sides of the container

    2. Hold the forceps with the tip down to prevent the disinfectant from running back and forth over both sterile and unsterile portions of the forceps

    (NOTE: See Figure 1 on the following page.)

JOB SHEET #1

FIGURE 1



C. Return forceps to container

1. Take care not to touch the outside or the rim of the container

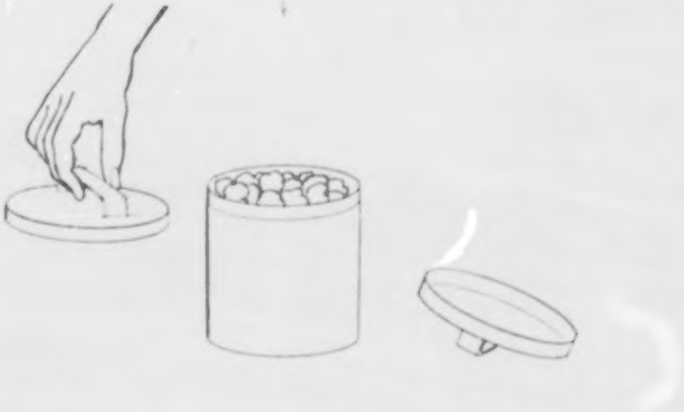
2. Make sure tips are together whenever forceps are lifted from or returned to the container

III. Procedure for removing the cover from a container of sterile supplies

A. Hold the cover with the inner surface down if cover is held

B. Place outer surface down to prevent contaminating the inside if the cover is laid down (Figure 2)

FIGURE 2



JOB SHEET #1

IV. Procedure for preparing a sterile field on a tray or table

- A. Lift cover from container of towels
- B. Remove one towel with transfer forceps
- C. Replace cover
- D. Transfer towel to free hand
- E. Replace transfer forceps
- F. Open towel, touching only the side which will touch the tray or table surface
- G. Lay towel on tray or table

V. Procedure for handling 4 x 4s, cotton balls, applicators

- A. Lift cover from container
- B. Remove desired number of articles with transfer forceps (Figures 3 and 4)

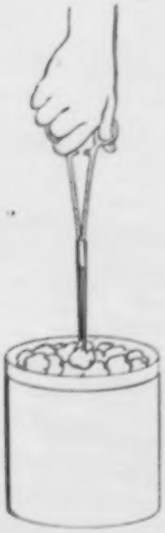


FIGURE 3

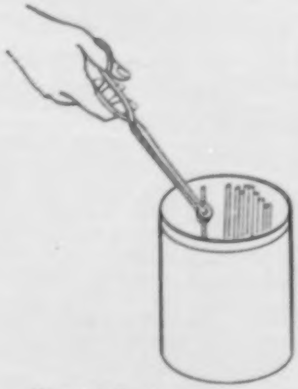


FIGURE 4

- C. Place articles along one side of the sterile surface
- D. Place along the other side one or more 4 x 4s on which to lay the instrument

  (NOTE: In some cases a sterile basin is placed on the tray to receive the instruments from the disinfectant solution.)
- E. Replace cover on container

JOB SHEET #1

VI. Procedure for handling instruments

A. Remove cover from the instrument container

B. Lift out the desired instrument with the transfer forceps (Figure 5)

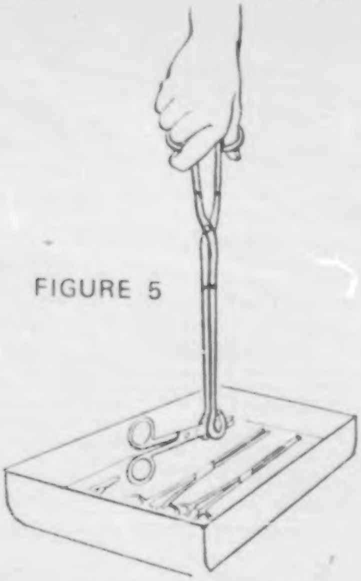


FIGURE 5

C. Place the instrument on the 4 x 4 or in the basin provided or hand instrument to another person (Figure 6)

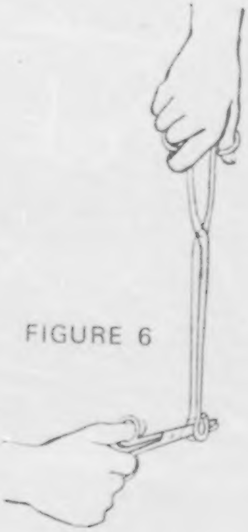


FIGURE 6

JOB SHEET #1

VII. Procedure for opening a large pack

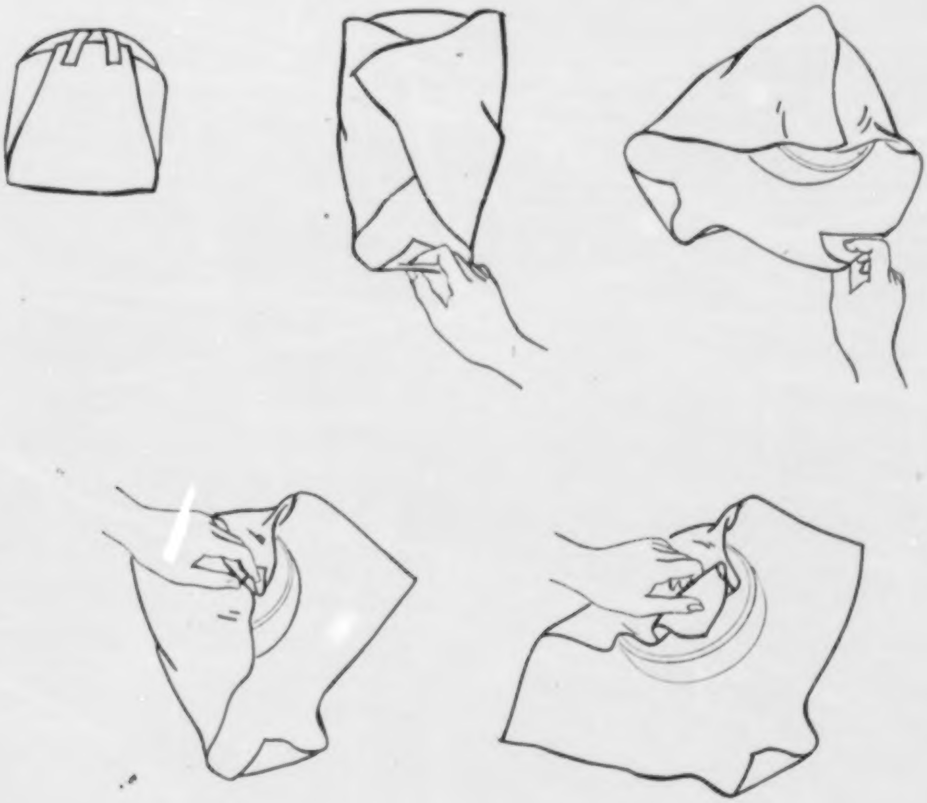
A. Place on the table the large packs to be opened

B. Loosen the fasteners

C. Fold back one flap at a time, grasping the wrapper from the outside so that the fingers never touch the inside

D. Use the articles from the pack as needed or transfer to a sterile tray with transfer forceps or sterile gloves (Figure 7)

FIGURE 7



JOB SHEET #1

VIII. Procedure for opening a small pack

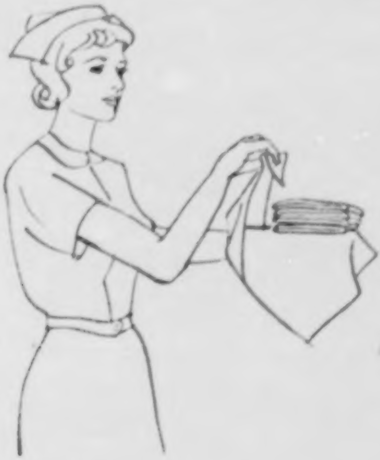
A. Loosen the fasteners

B. Hold the pack in one hand

C. Open the flaps one at a time with the other hand

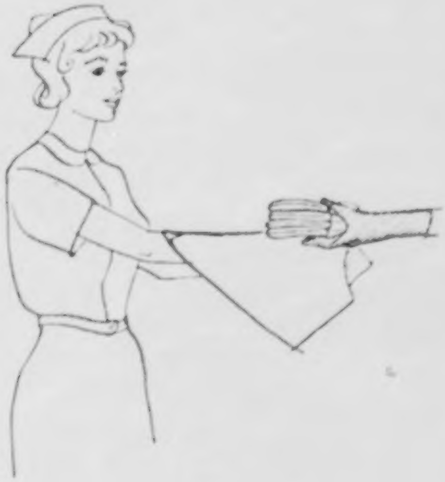
D. Hold the pack so that the last flap opened is toward you (Figure 8)

FIGURE 8



E. Hand article to someone wearing gloves or transfer with transfer forceps (Figure 9)

FIGURE 9



JOB SHEET #1

IX. Procedure for adding solutions to a tray

   A. Place container on tray for receiving the solution using transfer forceps

   B. Remove cap from container of solution

   C. Pour solution gently without splashing it

   (NOTE: Remember that liquid on the sterile field makes the field unsterile.)

   D. Replace cap on solution container

X. Procedure for care of a prepared tray

(NOTE: Trays should not be prepared too long before use due to the danger of contamination.)

   A. Cover the tray with another sterile towel, being careful not to touch the underside of the towel which will touch the tray

   B. Leave covered tray until needed or take to the patient's unit for use

   (NOTE: Many health care facilities use commercially prepared setups. These materials should be used according to the manufacturer's recommendations.)

SURGICAL ASEPSIS
UNIT I

JOB SHEET #2--APPLY A SIMPLE DRESSING

I. Equipment

  A. Dressing cart or tray with dressings needed

  B. Newspaper or bag for soiled dressings

  C. Adhesive tape

  D. Medication, if prescribed

  E. Solvent to remove tape

II. Procedure

  A. Wash hands

  B. Assemble supplies

    1. Check patient to see what dressings are needed

    2. Check physician's order for specific instructions

  C. Identify patient

  D. Explain procedure

  E. Provide privacy

  F. Wash hands

  G. Prepare nonsterile equipment

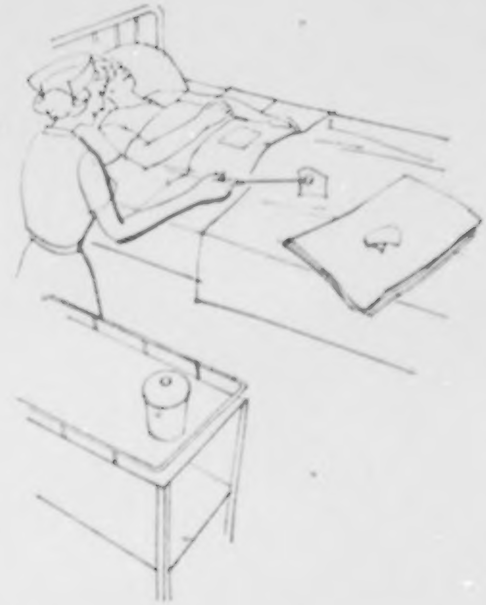
    1. Place newspaper or paper bag conveniently to receive soiled dressings

       (NOTE: See Figure 1 on the following page.)

    2. Cut adhesive tape and place to be accessible

JOB SHEET #2

FIGURE 1



H. Set up sterile field

  1. Open a sterile towel upon a table
  2. Place two pairs of forceps on it
  3. Place 4 x 4s or cotton balls on towel to use for cleanup of wound and/or removal of tape
  4. Place needed dressings to one side of sterile towel to avoid contaminating them
  5. Provide a tongue blade to spread medication, if used, on a dressing or on the wound

I. Remove the soiled dressing and place it on the paper or in the bag

  1. Remove outside dressing by hand
  2. Remove inner dressing with forceps

J. Clean the wound with 4 x 4s or cotton balls using forceps

  1. Clean from center out using circular motion
  2. Do not go back over the cleaned area with soiled 4 x 4
  3. Discard soiled 4 x 4
  4. Remove old tape as needed

JOB SHEET #2

K. Discard forceps by placing on edge of newspaper or in receptacle for soiled instruments

L. Apply clean dressing, using clean pair of forceps

   1. Apply prescribed medication to dressing or wound

   2. Cover wound with 4 x 4s, opened as needed

   3. Apply abdominal pads

   4. Secure dressing with tape or bandages

M. Place soiled forceps in proper receptacle

N. Discard soiled dressings wrapped in newspaper or in bag

O. Discard used towel as instructed

P. Return supplies to proper area

Q. Wash hands

R. Replenish supplies as necessary

S. Record the dressing change, noting

   1. Time

   2. Amount of drainage

   3. Condition of wound

   4. Medication used

   5. Area where applied

(NOTE: When commercially prepared dressing packs are used, follow the manufacturer's instructions.)

SURGICAL ASEPSIS
UNIT I

JOB SHEET #3--PUT ON STERILE GLOVES

I. Equipment

   A. Package of sterile gloves

   B. Soap

   C. Brush

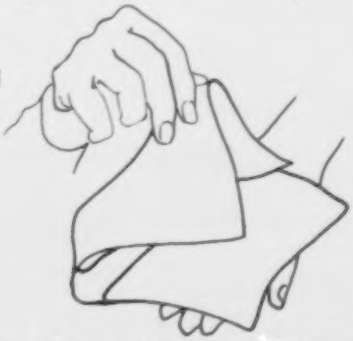
   D. Paper towels

II. Procedure

   A. Wash hands

   B. Open sterile glove wrapper, touching only the outside (Figure 1)

FIGURE 1

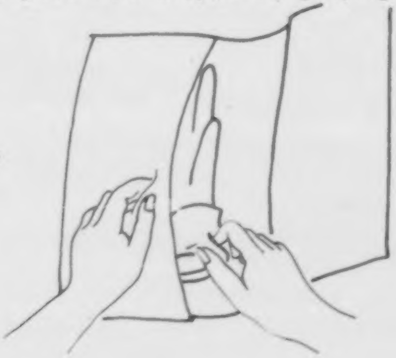


   C. Scrub hands for two minutes using brush, soap, and water as needed

   D. Rinse and dry hands

   E. Remove one glove from wrapper by grasping the cuff on the fold (Figure 2)

FIGURE 2

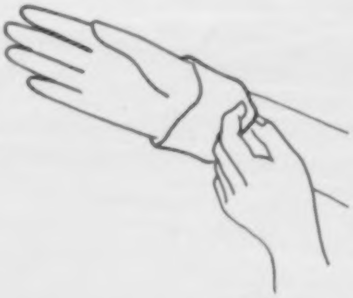


JOB SHEET #3

F. Put glove on by pulling on the folded edge of the cuff (Figure 3)

(NOTE: Do not touch the outside of the glove with the fingers of the ungloved hand.)

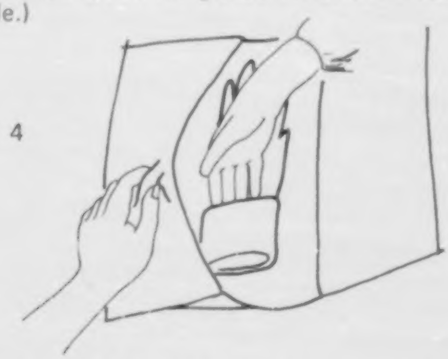
FIGURE 3



G. Remove second glove from wrapper by slipping the gloved fingers inside the folded cuff (Figure 4)

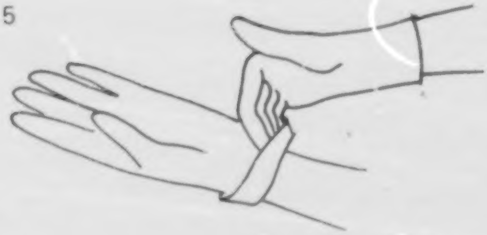
(NOTE: Do not touch the gloved hand to the outside of the wrapper, which is unsterile.)

FIGURE 4



H. Pull second glove on, taking care not to touch the outside of the gloved fingers to the ungloved hand (Figure 5)

FIGURE 5



I. Adjust the fingers as necessary

SURGICAL ASEPSIS
UNIT I

TEST

1. Match the terms on the right to the correct definition.

______a. Surgical instrument with two opposing blades or limbs controlled by handles

______b. Apparatus for sterilizing objects using steam under pressure

______c. Free of all microorganisms and spores

______d. All gross contamination and many microorganisms have been removed

______e. Procedures used to keep objects or areas sterile or completely free of all microorganisms

______f. Procedures used to protect the patient and his environment from the transmission of disease-producing organisms from one person to another

______g. Destruction of infection-producing organisms

______h. Process of destroying all microorganisms on a substance by exposure to chemical or physical agents

1. Clean
2. Sterile
3. Surgical asepsis
4. Disinfection
5. Medical asepsis
6. Autoclave
7. Sterilization
8. Forceps

2. List three techniques important to medical asepsis.

a.

b.

c.

3. List three techniques important to surgical asepsis.

a.

b.

c.

4. Discuss the reasons for maintaining aseptic techniques.

5. List ten general principles of surgical asepsis.

a.

b.

c.

d.

e.

f.

g.

h.

i.

j.

6. List four methods of sterilization.

a.

b.

c.

d.

7. Describe the transfer forceps.

8. List six instructions for using transfer forceps.

   a.

   b.

   c.

   d.

   e.

   f.

9. List five general instructions concerning dressing changes.

   a.

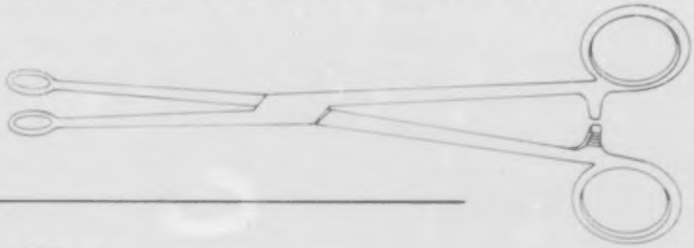
   b.

   c.

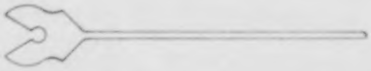
   d.

   e.

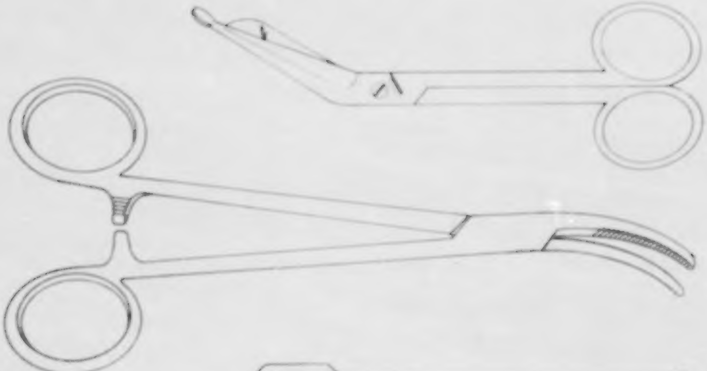
10. Identify the instruments used for dressing changes as illustrated below and on the following page by writing the correct names in the blanks provided.



a. ______________________________

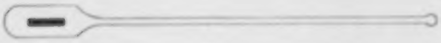


b. ______________________________

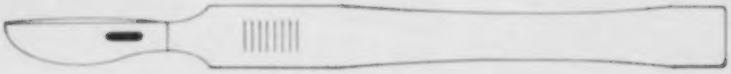


c. ____________________

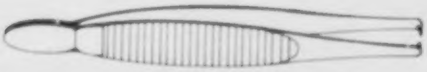
d. ____________________



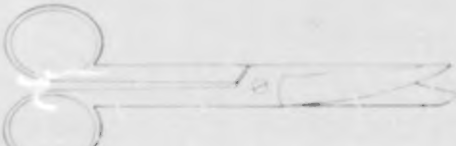
e. ____________________



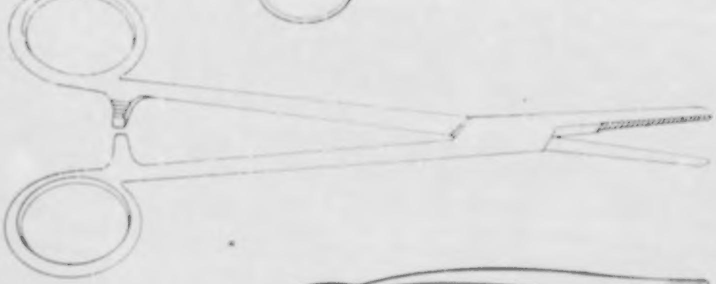
f. ____________________



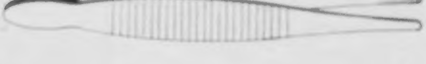
g. ____________________



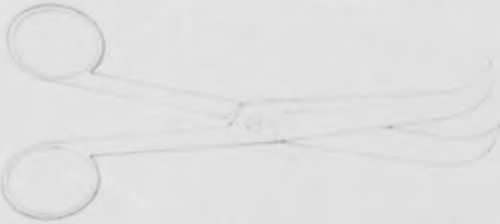
h. ____________________



i. ____________________



j. ____________________



k. ____________________

11. List five reasons for applying dressings.

    a.

    b.

    c.

    d.

    e.

12. Demonstrate the ability to:

    a. Use surgical supplies.

    b. Apply a simple dressing.

    c. Put on sterile gloves.

    (NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

SURGICAL ASEPSIS
UNIT I

ANSWERS TO TEST

1. a. 8
   b. 6
   c. 2
   d. 1
   e. 3
   f. 5
   g. 4
   h. 7

2. a. Sterilization or disinfection of articles to destroy unknown organisms
   b. Sterilization or disinfection of articles to destroy known organisms
   c. Correct handwashing

3. a. Sterilization of articles used in the operating room and delivery room
   b. Maintenance of sterility of articles used when carrying out procedures in any area of the health care institution including
      1) Changing or applying dressings
      2) Administering injections or intravenus infusions
      3) Catheterization of patients
   c. Scrubbing of hands and/or arms

4. Discussion should include:
   a. Failure to be exacting and meticulous is not readily detectable
   b. Because of the widespread and indiscriminate use of antibiotics, many antibiotic-resistant strains of bacteria are developing
   c. Some strains of microorganisms can survive for months or years in dust and bedding, especially in blankets or mattresses
   d. Some disease-producing organisms can be present in the nasal passages or on the skin of patients and personnel without causing any clinical symptoms
   e. Disease-producing organisms can be carried from one patient to another on improperly cleaned utensils such as thermometers or emesis basins
   f. The most susceptible persons are newborn infants, debilitated patients, and patients who have breaks in the skin such as surgical wounds or needle pricks from the administration of intravenous fluids

g. It is the nursing team's responsibility to maintain its own aseptic techniques and to stress the importance of aseptic techniques to other hospital personnel, patients, and visitors

5. Any ten of the following:

   a. Start with clean hands

   b. Handle sterile equipment only with sterile equipment

   c. Establish a sterile field or area for receiving all sterile equipment and supplies

   d. Maintain the sterile field

      1) Keep it dry

      2) Do not reach over it

      3) Do not brush against it or allow your uniform to touch it

      4) Do not turn your back to an uncovered sterile field

      5) Do not cough or sneeze over a sterile field

   e. Open sterile packages in such a way as to keep the inside of the wrapper and the contents sterile

   f. Open sterile packages near the time of use; exposure to air and unnecessary handling increases the danger of contamination

   g. Do not remove sterile objects from a sterile container with anything but a sterile instrument

   h. Do not touch unsterile articles with sterile transfer forceps or sterile gloves; to do so contaminates the forceps or gloves

   i. Open sterile containers properly

   j. Cannot sterilize skin; it can only be cleaned

   k. Consider the parts of the body not exposed to the outside as sterile

   l. Hold the corners of the wrapper securely, when unwrapping bundles, so that the corners do not touch the sterile field

   m. Avoid moisture on the sterile field; moisture permits transfer of microorganisms through a piece of cloth or paper

   n. Never return materials to a sterile container

   o. Avoid touching the bottle to the container or material receiving the solution when pouring solutions

   p. Consider an article unsterile if there is any doubt about its sterility

6. a. Boiling

   b. Autoclaving

   c. Chemical disinfection

   d. Dry heat

7. Description should include:

   a. Long forceps with a broad tip; a sponge forceps or similar instrument often used to handle sterile articles

   b. Usually kept in a tall, wide-mouthed glass or metal container of antiseptic solution

   c. Forceps and container are sterilized by autoclave or chemical disinfection

   d. Container should have enough solution to cover at least two-thirds of the forceps

8. Any six of the following:

   a. Keep only one forceps in each container

   b. Keep the sterile tips of the forceps tightly together when lifting them from or returning them to the container

   c. Keep the tips always pointed downward to prevent the solution from running onto the unsterile portion and then back onto the sterile part

   d. Avoid touching the rim or outside of the forceps container as well as the outside of other containers of sterile materials

   e. Resterilize the forceps and container at regular intervals; always resterilize if forceps touch anything unsterile

   f. Use only to transfer sterile supplies; do not use them to apply a dressing to a patient

   g. Remember only the part of the transfer forceps covered by the solution in the forceps container is sterile

   h. Drop sterile articles onto the sterile field; transfer forceps are not to touch the field

   i. Remember the outer edge of approximately one inch of the prepared field is considered contaminated; keep sterile articles inside this margin

9. Any five of the following:
    - a. Dressing changes are made by the doctor unless otherwise ordered
    - b. Patient's dressing should be observed to determine what is needed to replace it
    - c. All needed equipment should be assembled before removing the soiled dressing
    - d. Use of straps to secure dressings is advisable if frequent dressing changes are necessary
    - e. Binders may be needed to secure dressings in place if adhesive tape cannot be used
    - f. Frequency of dressing changes is influenced by
        - 1) Type of wound
        - 2) Amount of drainage
        - 3) Physician's preference
        - 4) Condition of dressing

10.
    - a. Transfer forceps
    - b. Groove director
    - c. Bandage scissors
    - d. Curved hemostat
    - e. Probe
    - f. Scalpel
    - g. Rattooth thumb forceps
    - h. Straight surgical scissors
    - i. Straight hemostat
    - j. Plain thumb forceps
    - k. Curved surgical scissors

11. Any five of the following:
    - a. Prevent contamination
    - b. Protect wound from further injury

c. Apply medication

d. Apply pressure to keep edges of wound together

e. Absorb drainage

f. Promote healing

12. Performance skills will be evaluated to the satisfaction of the instructor.

VENTILATION
UNIT II

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list ventilation principles and factors which influence respiratory difficulty. The student should be able to list nursing measures to increase respiratory efficiency and to discuss types of therapy. The student should be able to demonstrate techniques to enhance ventilation. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with ventilation to the correct definitions.
2. List six factors necessary for normal respiration.
3. List six principles of ventilation.
4. List assessment factors for the three types of data relating to respiratory status.
5. List nine influences which may predispose respiratory difficulty.
6. List five nursing measures to increase respiratory efficiency.
7. Match the types of mechanically assisted respiratory therapies to their purposes.
8. Discuss assisting with breathing exercises.
9. Discuss coughing as therapy.
10. State the purpose of respiratory suctioning.
11. List six precautions to observe in oronasal suctioning.
12. Discuss postural drainage.
13. Demonstrate the ability to:
    a. Assist with breathing exercises.
    b. Suction oronasal tract.
    c. Assist with postural drainage.

VENTILATION
UNIT II

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and job sheets.

   C. Discuss terminal and specific objectives.

   D. Demonstrate and discuss procedures outlined on the job sheets.

   E. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Demonstrate the ability to accomplish the procedures outlined on the job sheets.

   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Job sheets

      1. Job Sheet #1--Assist with Breathing Exercises

      2. Job Sheet #2--Suction Oronasal Tract

      3. Job Sheet #3--Assist with Postural Drainage

   D. Test

   E. Answers to test

II. References:

A. Brunner, Lillian S. et al. *The Lippincott Manual of Nursing Practice.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1974.

B. Feurst, Elinor V. et al. *Fundamentals of Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1974.

C. Hornemann, Grace V. *Basic Nursing Procedures.* Albany, New York: Delmar Publishers, 1972.

D. Johnston, Dorothy F. *Total Patient Care Foundations and Practice.* St. Louis, Missouri: The C. V. Mosby Company, 1972.

E. Mitchell, Pamela H. *Concepts Basic to Nursing.* New York: McGraw-Hill Book Company, 1973.

F. Sutton, Audrey L. *Bedside Nursing Techniques in Medicine and Surgery.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1964.

G. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

III. Filmstrips:

A. "Postural Drainage, Clapping, and Vibration." Trainex Corporation.

B. "Pharyngeal Suctioning." Trainex Corporation.

VENTILATION
UNIT II

INFORMATION SHEET

I. Terms and definitions

A. Ventilation--Inspiration and expiration of air from the lungs

B. Hyperventilation--Abnormally rapid, deep breathing

C. Anoxia--Absence or deficiency of oxygen

D. Hypoxia--Oxygen deficiency; any state wherein a physiologically inadequate amount of oxygen is available to tissue without respect to cause or degree

E. Atelectasis--Collapse of a lung or part of a lung

(NOTE: In newborn infants, atelectasis is incomplete expansion of the lungs.)

F. Hydration--Absorption of or combination with water

G. Ciliary action--Wavelike movement of the cilia, such as those on the epithelium of the respiratory tract

H. Postural drainage--Removal of bronchial secretions or the contents of a lung abscess by the use of gravity and position

I. Hypostatic pneumonia--Collection of fluid in the dependent portion of the lung which is seen in patients who remain in one position for long periods of time

J. Inhalation therapy--Program for prevention and treatment of respiratory and circulatory dysfunctions

K. Sternocleidomastoid--Muscle extending from lateral neck to the clavicle

L. Trapezius--Muscle in posterior neck and medial upper back

M. Latissimus dorsi--Muscle in lower posterior chest

N. Blow bottle--Large bottle partially filled with water; used for respiratory exercise

O. Positive pressure breathing--Providing oxygen and/or medication under increased pressure using a special respirator

P. Glottis--Vocal folds and the space between them

INFORMATION SHEET

Q. Suctioning--Mechanical removal of fluid from a body cavity or passage

R. Physical therapist--Individual skilled in the use of physical agents other than drugs in the treatment of disease and injury

S. Respiratory therapist--Person skilled in the use of medications and physical agents for respiratory dysfunctions

T. Nebulizer--Device that breaks up a liquid into small particles or mist which can then be carried down into the alveoli with air

U. Tidal volume--Amount of air breathed in and out by a single breath

V. Bronchospasm--Temporary narrowing of the bronchi due to involuntary contraction of the smooth muscle of the bronchi

W. Percussion--Movement done by striking the chest wall in a rhythmic fashion with cupped hands over the affected area; clapping

X. Vibration--Technique of applying manual compression and tremor to the chest wall during exhalation

II. Factors necessary for normal respiration

A. Adequate oxygen supply

B. Patent airway

C. Sufficient healthy lung tissue

D. Nervous and chemical control

E. Intact rib cage and diaphragm

F. Sufficient hemoglobin and ample volume of blood

G. Healthy heart

H. Intact circulation

III. Principles of ventilation

A. Respiration is the most fundamental of life processes

B. Without oxygen the brain begins to die within two or three minutes

C. Any obstruction in the air passageway can decrease or stop respiration

INFORMATION SHEET

D. Obstruction may be a foreign substance such as a coin or piece of food, the tongue which has fallen back against the pharynx, or excessive or thickened internal secretions

E. Coughing, swallowing, and sneezing are physiological means by which the respiratory tract is cleared

F. Incomplete expansion of the lungs during respiration can result in atelectasis

G. Adequate hydration is essential to respiratory functioning

(NOTE: The lungs normally produce a watery mucus which is propelled up and out of the lungs by ciliary action. This action helps rid the lungs of waste products and inhaled foreign particles. The mucus also protects the lining and underlying tissues from irritation and infection.)

H. Decreased physical activity such as prolonged bedrest may sufficiently depress respiratory activity to cause hypostatic pneumonia

I. Some nursing measures may be necessary to assist patients to maintain or restore adequate ventilation

IV. Assessment of respiratory status

A. Objective data

1. Rate--Number of respirations per minute

(NOTE: Respiratory rate should be counted not estimated. When respiratory difficulty is observed or expected, respirations should be assessed frequently.)

2. Rhythm--Regularity of rate and depth of respirations

3. Character--Effort required, muscles involved

(NOTE: The major respiratory muscles are the diaphragm and the external intercostals. Severe muscular exercise, acute airway obstruction, and atelectasis are some of the normal and abnormal conditions which might bring about the use of the accessory respiratory muscles, the sternocleidomastoid, trapezius, and latissimus dorsi muscles. Using these muscles increases the volume of inspired air.)

4. Breathing sounds--Including those heard with the unaided ear and with a stethoscope

INFORMATION SHEET

5. Mental status--Subtle changes may indicate oxygen insufficiency to the brain

   (NOTE: Early signs of cerebral oxygen deficiency are restlessness, anxiety, irritability, and apathy. The mental status of a person with a history of respiratory difficulty should be observed and recorded.)

6. Color--Relatively unreliable as a source of data except as changes of color are noted

   (NOTE: Skin color from person to person varies widely; therefore, initial observations may be quite inaccurate.)

B. Subjective data

   1. History of previous or current respiratory, cardiac, or blood disorders

   2. Description of respiratory impairment

   3. Impression of limitations due to respiratory impairment

C. Laboratory data

   1. X-rays of chest

   2. Pulmonary function tests which measure the lung capacity and mechanics of breathing

   3. Blood analyses such as hemoglobin, carbon dioxide combining power, and blood gases

V. Influences which may predispose respiratory difficulty

   A. Smoking

   B. Occupations such as mining, working with asbestos, milling and baking, or using chemical sprays

   C. Respiratory or cardiac impairment

   D. Air pollution

   E. Administration of anesthesia, either inhaled or systemic

INFORMATION SHEET

- F. Trauma
- G. Marked obesity
- H. Musculoskeletal defects, congenital or acquired
- I. Neurological defects
- J. Immobilization
- K. Poor posture
- L. Use of narcotics and other drugs

VI. Nursing measures to increase respiratory efficiency

- A. Changing and adjusting position frequently
- B. Assisting with deep breathing exercises
- C. Encouraging coughing
- D. Suctioning respiratory tract
- E. Postural drainage
- F. Early ambulation and/or exercise following illness, injury, or surgery
- G. Mechanically assisted respiratory therapy

  (NOTE: The use of mechanically assisted inhalation therapy should not be permitted to replace effective nursing measures. Any method which effectively increases the tidal volume promotes respiratory efficiency.)

VII. Types and purposes of mechanically assisted respiratory therapy

- A. Inhalations of moisturized air--Local treatment of respiratory infections
- B. Smelling salts--Rapid systemic stimulation of the heart and respiration
- C. Blow bottle--Increases respiratory capacity and function

  (NOTE: Blowing out a candle, blowing up a balloon, or breathing into a paper bag are other exercises which increase respiratory function.)

- D. Nebulizer--Administration of nonvolatile drugs for inhalation
- E. Oxygen administration--Provides needed oxygen during decreased respiratory or circulatory function

INFORMATION SHEET

F. Intermittent positive pressure breathing (IPPB)--Adminstration of medication and oxygen together to loosen secretions, increase ventilation, and reduce bronchospasms

G. Carbon dioxide rebreathing--Facilitates deep breathing and coughing

VIII. Assisting with breathing exercises

A. Patient should receive instruction in deep breathing exercises and their purposes before the actual need is present, if possible

B. Most effective positions for breathing exercises are sitting and supine

C. Patient should be encouraged to inhale to the greatest chest expansion possible

(NOTE: Yawning and sighing are involuntary physiological processes which increase tidal volume.)

D. Patient should be instructed to inhale slowly through his nose, hold his breath for a count of three, and then exhale through his mouth

E. Supporting an incisional area with the hands, a pillow, or a folded blanket will minimize the patient's discomfort during the exercises

F. Exercises should be repeated as prescribed and/or according to the patient's condition

(NOTE: Some patients may need breathing exercises every hour; others may need them every two to four hours.)

IX. Coughing as therapy

A. Consists of an initial irritation, a deep inhalation, a rapid tight closing of the glottis, followed by a sudden, violent, noisy expulsion of air from the lungs

B. Provides an effective means of expelling secretions and other debris from the respiratory tract

C. Is most effective when the individual is in a sitting position, unless otherwise indicated, and when he is sufficiently hydrated

D. Involuntary coughing usually accompanies infection and/or irritation of the respiratory tract

E. May be desirable unless it is ineffective or becomes frequent enough to cause fatigue

INFORMATION SHEET

X. Purpose of respiratory suctioning--Relieve obstruction to facilitate air exchange

(NOTE: Decreased air exchange may be due to obstructions such as aspiration of blood, vomitus, or other foreign material; bleeding from damaged lung tissue; or increased pulmonary secretions. It may also be due to paralysis, shock, trauma, weakness, bronchospasm, or inhibition of the cough reflex due to trauma or medication.)

XI. Precautions to observe in oronasal suctioning

- A. Patient should take a deep breath before suctioning
- B. Mucous membranes are delicate and easily irritated; therefore,
  - 1. Lubricate tip
  - 2. Insert tip gently three to five inches
  - 3. Rotate tip slightly during suctioning
- C. Suction should not be applied during introduction of the suction tip
- D. Suction, after introduction of the tip, should be done for intermittent periods of approximately ten seconds to provide intervals for the patient to rest and catch his breath
- E. Suctioning should be continued until the air passageway is clear
- F. Separate tips or catheters should be used for suctioning nose and mouth

XII. Postural drainage

- A. Normal movement of pulmonary secretions is in an upward direction
- B. In a head-downward position, gravity assists the normal movement of secretions

  (NOTE: The exact position of the patient depends upon the portion of the lung to be drained.)
- C. During the procedure and for a period of time afterwards, the patient is encouraged to cough and expectorate the secretions which drain from his lungs
- D. The patient may be able to maintain the position initially for only a short time because of fatigue but his tolerance will increase
- E. Nursing personnel should supervise closely throughout the procedure
- F. Most advantageous time is midway between meals to avoid nausea and vomiting

INFORMATION SHEET

G. Percussion and vibration of the chest wall may be prescribed as additional measures to loosen secretions within the bronchi

(NOTE: These procedures are usually performed by a physical therapist or respiratory therapist. If the procedures are the responsibility of the nurse, additional instruction will be necessary.)

VENTILATION
UNIT II

JOB SHEET #1--ASSIST WITH BREATHING EXERCISES

I. Deep breathing

  A. Equipment--Pillow or folded blanket

  B. Procedure

    1. Wash hands

    2. Identify the patient and explain the procedure

    3. Position patient in one of two ways

      a. Assist patient to sitting position unless contraindicated

      b. Assist patient into supine position using only one pillow

    4. Support incision as needed with pillow or folded blanket

    5. Instruct patient to

      a. Breathe deeply five times, slowly and gently

      b. Inhale through the nose

      c. Exhale through the mouth

      d. Expel a sixth breath forcefully with a cough

    6. Provide for patient's comfort

    7. Wash hands

    8. Report and record procedure

II. Blow bottle

  A. Equipment

    1. Bottle with 2000 cc capacity or two bottles with 1000 cc capacity

    2. Two-hole rubber stoppers to fit bottles

JOB SHEET #1

3. Tubing
4. Mouthpiece
5. Glass of water
6. Drinking straw

B. Procedure

1. Check physician's order
2. Wash hands
3. Prepare glass of water and drinking straw
4. Identify patient and explain procedure
5. Instruct patient to blow bubbles through the drinking straw into the glass of water

   (NOTE: When patient is able to do this without difficulty, he is ready to use a blow bottle.)

6. Prepare blow bottle similarly to Figure 1 or 2

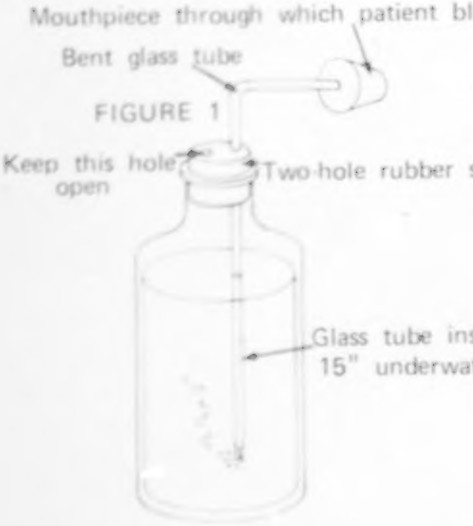

Mouthpiece through which patient blows
Bent glass tube
Keep this hole open
Two-hole rubber stopper
Glass tube inserted 15" underwater

FIGURE 1

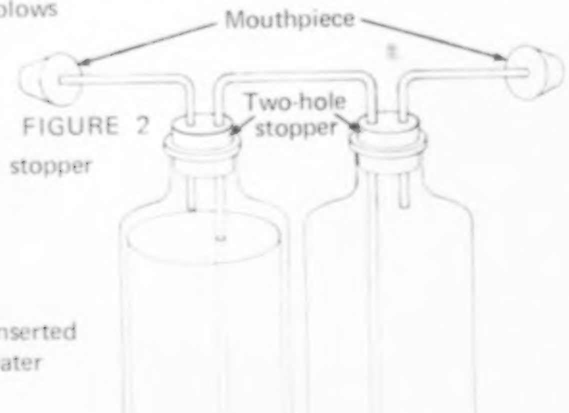

Mouthpiece
Two-hole stopper

FIGURE 2

JOB SHEET #1

a. Using one bottle

(NOTE: Refer to Figure 1 on the preceding page.)

1) Adjust tubing inserted into the bottle

(NOTE: As the tube is inserted deeper into the water, it requires greater effort to make bubbles.)

2) Instruct patient to blow into the bottle

3) Continue exercise as prescribed, adjusting to patient's tolerance

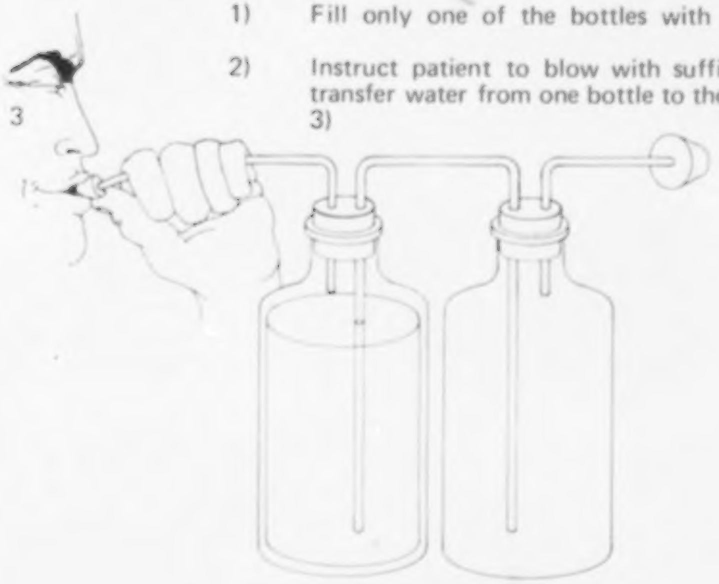
b. Using two bottles

(NOTE: Refer to Figure 2 on the preceding page.)

1) Fill only one of the bottles with water

2) Instruct patient to blow with sufficient force to transfer water from one bottle to the other (Figure 3)

FIGURE 3



3) Continue exercise as prescribed

7. Clean equipment and return to proper place

8. Wash hands

9. Report and record procedures

(NOTE: Follow manufacturer's instructions when using commercially prepared equipment.)

VENTILATION
UNIT II

JOB SHEET #2--SUCTION ORONASAL TRACT

I. Equipment

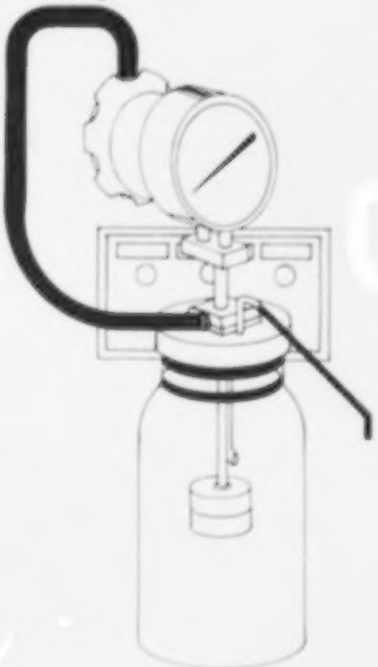
A. Suction tip or catheter and Y-tube

B. Container of water

(NOTE: Suctioning of a small child or infant may be done with a bulb syringe.)

C. Suction machine (Figure 1)

FIGURE 1



II. Procedure

A. Wash hands

B. Assemble and check equipment

C. Identify patient and explain procedure

D. Place patient in supine position unless contraindicated

E. Turn on machine

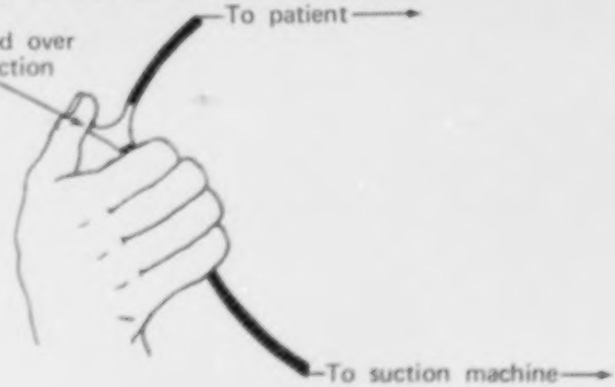
F. Place suction tip in container of water

JOB SHEET #2

G. Cover air inlet with thumb to activate suction (Figure 2)

(NOTE: Water lubricates the catheter or suction tip and prevents secretions from adhering to the side of the suction bottle.)

FIGURE 2


To patient
Thumb is placed over Y-tube to suction
To suction machine

H. Clamp off suction tubing or remove thumb from air inlet to inactivate suction while inserting tip

I. Insert suction tip or catheter three to five inches through the nose or mouth into the pharyngeal cavity

J. Place thumb over air inlet and suction for ten seconds, rotating the tip as it is withdrawn

(NOTE: Thumb on, suction on.
Thumb off, suction off.)

K. Place tip in water and activate suction to clean tubing

L. Repeat suctioning as necessary to clear passages

M. Observe suction bottle frequently

(CAUTION: Do not allow suction bottle to fill more than indicated, usually about three-fourths full. Overfilling the bottle will cause fluid to be drawn into the motor.)

N. Turn off machine

O. Cover suction tip when not in use or discard as directed

P. Empty suction bottle and replenish solution and supplies

JOB SHEET #2

Q. Wash hands

R. Record procedure including

   1. Time
   2. Amount and character of secretions
   3. Reaction of patient
   4. Observations

(NOTE: Suctioning equipment is usually left at the patient's bedside. At termination of its use, clean and return equipment to proper place. If disposable equipment is used, follow manufacturer's instructions.)

VENTILATION
UNIT II

JOB SHEET #3--ASSIST WITH POSTURAL DRAINAGE

I. Equipment

  A. Emesis basin

  B. Tissue wipes

  C. Additional cover as needed

  D. Pillows or chair as needed

II. Procedure

  A. Check physician's order for details of treatment

  B. Wash hands

  C. Identify patient and provide privacy

  D. Instruct patient concerning the purpose, position, and effects of the procedure

  E. Administer medication if prescribed

  F. Drape patient

  G. Position patient, keeping spine straight; provide support as needed

  (NOTE: Position is prescribed by the physician but may be similar to one of the positions below.)

    1. Position 1

    (NOTE: See Figure 1 on the following page.)

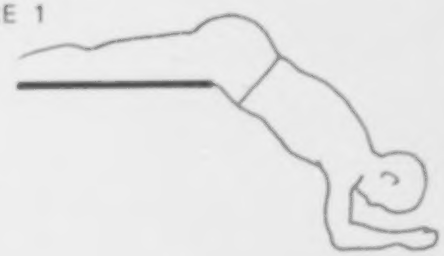
JOB SHEET #3

a. Place patient in prone position across the bed with hips at the edge of the bed

b. Place upper body at forty-five degree angle

c. Support as needed with chair, pillows, or folded towel under patient's forehead and arms

FIGURE 1

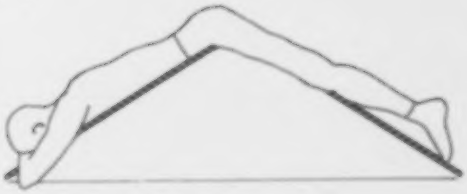


2. Position 2 (Figure 2)

a. Place patient in prone position facing the foot of the bed with his hips at the knee break

b. Elevate the bed so that body is in a forty-five degree angle position

FIGURE 2



3. Position 3

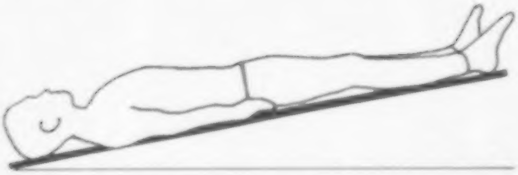
(NOTE: See Figure 3 on the following page.)

a. Place patient in level position

JOB SHEET #3

b. Elevate the foot of the bed eighteen inches

FIGURE 3



4. Positions 4 and 5 (Figures 4 and 5)
   a. Place patient on side opposite lung area to be treated
   b. Elevate the foot of the bed eighteen inches

FIGURE 4

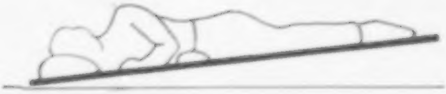
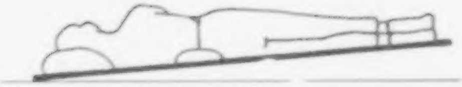


FIGURE 5



JOB SHEET #3

H. Provide additional cover as needed for warmth

I. Place emesis basin and tissue wipes for patient's convenience

J. Percuss or vibrate the chest wall as prescribed

(NOTE: In most health care institutions, a physical therapist or respiratory therapist is responsible for these actions. If it is part of the nurse's responsibility, special instructions for these procedures will be necessary.)

K. Observe patient's color and pulse rate frequently

(NOTE: In some instances it may be necessary for a health care worker to remain with the patient throughout the treatment.)

L. Treatment is continued as prescribed, usually for fifteen to twenty minutes, four times per day

M. Position patient for comfort after prescribed time of treatment

N. Assist patient with mouth care

O. Provide for patient's comfort

(NOTE: Patient is usually instructed to rest in bed for thirty minutes following the procedure.)

P. Replace equipment

Q. Wash hands

R. Record and report procedures including

1. Medication
2. Position
3. Length of time
4. Description of secretions
5. Tolerance
6. Color and pulse rate

VENTILATION
UNIT II

TEST

1. Match the terms on the right to the correct definition. (Answers to "a" through "m" are on this page.)

_____a. Inspiration and expiration of air from the lungs

_____b. Absence or deficiency of oxygen

_____c. Oxygen deficiency; any state wherein a physiologically inadequate amount of oxygen is available to tissue without respect to cause or degree

_____d. Collapse of a lung or part of a lung

_____e. Absorption of or combination with water

_____f. Wavelike movement of the cilia such as those on the epithelium of the respiratory tract

_____g. Removal of bronchial secretions or the contents of a lung abscess by the use of gravity and position

_____h. Program for prevention and treatment of respiratory and circulatory dysfunctions

_____i. Muscle extending from lateral neck to the clavicle

_____j. Muscle in posterior neck and medial upper back

_____k. Muscle in lower posterior chest

_____l. Large bottle partially filled with water; used for respiratory exercise

_____m. Providing oxygen and/or medication under increased pressure using a special respirator

1. Inhalation therapy
2. Trapezius
3. Ciliary action
4. Ventilation
5. Latissimus dorsi
6. Anoxia
7. Positive pressure breathing
8. Hydration
9. Hypoxia
10. Postural drainage
11. Blow bottle
12. Sternocleidomastoid
13. Atelectasis

(Answers for "n" through "x" are on this page.)

______n. Technique of applying manual compression and tremor to the chest wall during exhalation

______o. Movement done by striking the chest wall in a rhythmic fashion with cupped hands over the affected area; clapping

______p. Temporary narrowing of the bronchi due to involuntary contraction of the smooth muscle of the bronchi

______q. Amount of air breathed in and out by a single breath

______r. Device that breaks up a liquid into small particles or mist which can then be carried down into the alveoli with air

______s. Individual skilled in the use of physical agents other than drugs in the treatment of disease and injury

______t. Person skilled in the use of medications and physical agents for respiratory dysfunctions

______u. Vocal folds and the space between them

______v. Mechanical removal of fluid from a body cavity or passage

______w. Collection of fluid in the dependent portion of the lung which is seen in patients who remain in one position for long periods of time

______x. Abnormally rapid, deep breathing

14. Glottis
15. Suctioning
16. Physical therapist
17. Respiratory therapist
18. Bronchospasm
19. Vibration
20. Tidal volume
21. Hyperventilation
22. Nebulizer
23. Percussion
24. Hypostatic pneumonia

2. List six factors necessary for normal respiration.

a.

b.

c.

d.

e.

f.

3. List six principles of ventilation.

   a.

   b.

   c.

   d.

   e.

   f.

4. List assessment factors for the three types of data relating to respiratory status.

   a. Objective

      1)

      2)

      3)

      4)

      5)

      6)

   b. Subjective

      1)

      2)

      3)

   c. Laboratory

      1)

      2)

      3)

5. List nine influences which may predispose respiratory difficulty.
   a.
   b.
   c.
   d.
   e.
   f.
   g.
   h.
   i.

6. List five nursing measures to increase respiratory efficiency.
   a.
   b.
   c.
   d.
   e.

7. Match the types of mechanically assisted respiratory therapies on the right to the correct purpose.

______a. Local treatment of respiratory infections

______b. Facilitates deep breathing and coughing

______c. Provides needed oxygen during decreased respiratory or circulatory function

______d. Administration of medication and oxygen together to loosen secretions, increase ventilation, and reduce bronchospasms

______e. Rapid systemic stimulation of the heart and respiration

______f. Increases respiratory capacity and function

______g. Administration of nonvolatile drugs for inhalation

1. Nebulizer
2. Smelling salts
3. Inhalations of moisturized air
4. Blow bottle
5. Oxygen administration
6. Carbon dioxide rebreathing
7. Intermittent positive pressure breathing

8. Discuss assisting with breathing exercises.

9. Discuss coughing as therapy.

10. State the purpose of respiratory suctioning.

11. List six precautions to observe in oronasal suctioning.

    a.

    b.

    c.

    d.

    e.

    f.

12. Discuss postural drainage.

13. Demonstrate the ability to:

    a. Assist with breathing exercises.

    b. Suction oronasal tract.

    c. Assist with postural drainage.

    (NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

VENTILATION
UNIT II

ANSWERS TO TEST

1.
   a. 4
   b. 6
   c. 9
   d. 13
   e. 8
   f. 3
   g. 10
   h. 1
   i. 12
   j. 2
   k. 5
   l. 11
   m. 7
   n. 19
   o. 23
   p. 18
   q. 20
   r. 22
   s. 16
   t. 17
   u. 14
   v. 15
   w. 24
   x. 21

2. Any six of the following:
   a. Adequate oxygen supply
   b. Patent airway
   c. Sufficient healthy lung tissue
   d. Nervous and chemical control
   e. Intact rib cage and diaphragm
   f. Sufficient hemoglobin and ample volume of blood
   g. Healthy heart
   h. Intact circulation

3. Any six of the following:
   a. Respiration is the most fundamental of life processes
   b. Without oxygen the brain begins to die within two or three minutes
   c. Any obstruction in the air passageway can decrease or stop respiration
   d. Obstruction may be a foreign substance such as a coin or piece of food, the tongue which has fallen back against the pharynx, or excessive or thickened internal secretions

e. Coughing, swallowing, and sneezing are physiological means by which the respiratory tract is cleared

f. Incomplete expansion of the lungs during respiration can result in atelectasis

g. Adequate hydration is essential to respiratory functioning

h. Decreased physical activity such as prolonged bedrest may sufficiently depress respiratory activity to cause hypostatic pneumonia

i. Some nursing measures may be necessary to assist patients to maintain or restore adequate ventilation

4. a. Objective

   1) Rate

   2) Rhythm

   3) Character

   4) Breathing sounds

   5) Mental status

   6) Color

   b. Subjective

   1) History of previous or current respiratory, cardiac, or blood disorders

   2) Description of respiratory impairment

   3) Impression of limitations due to respiratory impairment

   c. Laboratory

   1) X-rays of chest

   2) Pulmonary function tests which measure the lung capacity and mechanics of breathing

   3) Blood analyses such as hemoglobin, carbon dioxide combining power, and blood gases

5. Any nine of the following:

   a. Smoking

   b. Occupations such as mining, working with asbestos, milling and baking, or using chemical sprays

c. Respiratory or cardiac impairment

d. Air pollution

e. Administration of anesthesia, either inhaled or systemic

f. Trauma

g. Marked obesity

h. Musculoskeletal defects, congenital or acquired

i. Neurological defects

j. Immobilization

k. Poor posture

l. Use of narcotics and other drugs

6. Any five of the following:

a. Changing and adjusting position frequently

b. Assisting with deep breathing exercises

c. Encouraging coughing

d. Suctioning respiratory tract

e. Postural drainage

f. Early ambulation and/or exercise following illness, injury, or surgery

g. Mechanically assisted respiratory therapy

7. a. 3 e. 2

b. 6 f. 4

c. 5 g. 1

d. 7

8. Discussion should include:

a. Patient should receive instruction in deep breathing exercises and their purposes before the actual need is present, if possible

b. Most effective positions for breathing exercises are sitting and supine

c. Patient should be encouraged to inhale to the greatest chest expansion possible

d. Patient should be instructed to inhale slowly through his nose, hold his breath for a count of three, and then exhale through his mouth

e. Supporting an incisional area with the hands, a pillow, or a folded blanket will minimize the patient's discomfort during the exercises

f. Exercises should be repeated as prescribed and/or according to the patient's condition

9. Discussion should include:

   a. Consists of an initial irritation, a deep inhalation, a rapid tight closing of the glottis, followed by a sudden violent, noisy expulsion of air from the lungs

   b. Provides an effective means of expelling secretions and other debris from the respiratory tract

   c. Is most effective when the individual is in a sitting position, unless otherwise indicated, and when he is sufficiently hydrated

   d. Involuntary coughing usually accompanies infection and/or irritation of the respiratory tract

   e. May be desirable unless it is ineffective or becomes frequent enough to cause fatigue

10. Relieve obstruction to facilitate air exchange

11. a. Patient should take a deep breath before suctioning

   b. Mucous membranes are delicate and easily irritated; therefore,

      1) Lubricate tip

      2) Insert tip gently three to five inches

      3) Rotate tip slightly during suctioning

   c. Suction should not be applied during introduction of the suction tip

   d. Suction, after introduction of the tip, should be done for intermittent periods of approximately ten seconds to provide intervals for the patient to rest and catch his breath

   e. Suctioning should be continued until the air passageway is clear

   f. Separate tips or catheters should be used for suctioning nose and mouth

12. Discussion should include:

    a. Normal movement of pulmonary secretions is in an upward direction

    b. In a head-downward position, gravity assists the normal movement of secretions

    c. During the procedure and for a period of time afterwards, the patient is encouraged to cough and expectorate the secretions which drain from his lungs

    d. The patient may be able to maintain the position initially for only a short time because of fatigue but his tolerance will increase

    e. Nursing personnel should supervise closely throughout the procedure

    f. Most advantageous time is midway between meals to avoid nausea and vomiting

    g. Percussion and vibration of the chest wall may be prescribed as additional measures to loosen secretions within the bronchi

13. Performance skills will be evaluated to the satisfaction of the instructor.

ADMINISTRATION OF OXYGEN
UNIT III

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list principles and safety factors relating to the use and administration of oxygen. The student should be able to describe methods and devices for administration of oxygen and demonstrate the use of equipment. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with oxygen administration to the correct definitions.
2. List eight signs or symptoms of hypoxia or oxygen deficiency.
3. List four principles of oxygen administration.
4. Describe the two types of oxygen supply.
5. List six safety factors to observe when using oxygen.
6. List six additional safety factors to observe when using oxygen in cylinders.
7. Describe four methods of administering oxygen to adults and larger children.
8. Describe three methods of administering oxygen to infants and small children.
9. Describe three devices used for nebulization.
10. Discuss the use of intermittent positive pressure breathing units.
11. Demonstrate the ability to:
    a. Prepare an oxygen cylinder for use.
    b. Prepare for oxygen administration using piped-in oxygen.
    c. Use a nasal cannula.
    d. Insert a nasal catheter.
    e. Use an oxygen mask.
    f. Use a nebulizer.
    g. Prepare and use an oxygen tent.

ADMINISTRATION OF OXYGEN
UNIT III

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and job sheets.

   C. Make transparencies.

   D. Discuss terminal and specific objectives.

   E. Discuss information sheet.

   F. Demonstrate and discuss the procedures outlined on the job sheets.

   (NOTE: Before the demonstrations, make any necessary changes on the job sheets to conform to the policies and equipment of the institution.)

   G. Arrange for a demonstration of respiratory therapy equipment used in the health care facility.

   H. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Demonstrate the ability to accomplish the procedures outlined on the job sheets.

   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

C. Transparency masters

  1. TM 1--Oxygen Cylinder: Valve and Cap
  2. TM 2--Oxygen Cylinder: Regulator and Humidifier
  3. TM 3--Some Outlets for Piped-in Oxygen
  4. TM 4--Flowmeter for Piped-in Oxygen
  5. TM 5--Nasal Cannula and Catheter
  6. TM 6--Oxygen Mask
  7. TM 7--Oxygen Tent
  8. TM 8--Nebulizers

D. Job sheets

  1. Job Sheet #1--Prepare an Oxygen Cylinder for Use
  2. Job Sheet #2--Prepare for Oxygen Administration Using Piped-in Oxygen
  3. Job Sheet #3--Use a Nasal Cannula
  4. Job Sheet #4--Insert a Nasal Catheter
  5. Job Sheet #5--Use an Oxygen Mask
  6. Job Sheet #6--Use a Nebulizer
  7. Job Sheet #7--Prepare and Use an Oxygen Tent

E. Test

F. Answers to test

II. References:

A. Brunner, Lillian et al. *The Lippincott Manual of Nursing Practice.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1974.

B. Dison, Norma G. *An Atlas of Nursing Techniques.* St. Louis, Missouri: The C. V. Mosby Company, 1975.

C. Fuerst, Elinor V. et al. *Fundamentals of Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1974.

D. Hornemann, Grace V. *Basic Nursing Procedures.* Albany, New York: Delmar Publishers, 1972.

E. Mitchell, Pamela H. *Concepts Basic to Nursing.* New York: McGraw-Hill Book Company, 1973.

F. Sutton, Audrey L. *Bedside Nursing Techniques in Medicine and Surgery.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1964.

G. Thompson, Ella M., and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

III. Other materials:

A. Filmstrips

1. "Oxygen Administration." Trainex Corporation.
2. "IPPB - Assisted, Program I: Bird Mark VII." Trainex Corporation.
3. "IPPB - Assisted, Program II: Bennett PR-1." Trainex Corporation.
4. "Ultrasonic Nebulizers." Trainex Corporation.

B. Pamphlets

1. *Linde Oxygen Therapy Handbook.*
2. *Take Care of Yourself.*
3. *Questions and Answers on Oxygen Therapy.*

(NOTE: These and other pamphlets are available from Union Carbide Corporation, Linde Division, 2 Greenaway Plaza East, Houston, Texas 77046.)

ADMINISTRATION OF OXYGEN
UNIT III

INFORMATION SHEET

I. Terms and definitions

  A. Flow rate--Amount of oxygen supplied during each minute of administration

  B. Regulator--Mechanical device used on an oxygen cylinder with one gauge to show how much oxygen the tank contains and a second gauge to show the rate of flow

  C. Flowmeter--Device for measuring the rate of flow of a gas or liquid

  D. Static electricity--Electricity produced by friction

  E. Retrolental fibroplasia--Retinal damage in premature infants following administration of a high concentration of oxygen

  F. Nasal cannula--Disposable plastic device which has two protruding prongs for insertion into the nostrils and is used to administer oxygen

  G. Nasal catheter--Plastic tube with rounded tip for insertion into the nasopharynx or oropharynx for administration of oxygen

  H. Facial mask--Plastic device of varying sizes and shapes made to fit over the nose and mouth for the administration of oxygen

  I. Oxygen tent--Canopy of lightweight, supple, transparent material which encloses the upper part of a patient's body and bed; used to administer oxygen

  J. Humidifier--Container, usually a glass jar, attached to oxygen equipment to increase moisture content of oxygen during administration

  K. Mucolytic--Dissolving or liquifying mucus

  L. Croupette--Oxygen tent with humidification to be used for an infant or child

II. Signs and symptoms of hypoxia or oxygen deficiency

  A. Restlessness, irritability, or anxiety

  B. Yawning

  C. Headache

INFORMATION SHEET

D. Increased pulse rate

E. Irregular respirations

F. Decreased coordination or awareness

G. Vertigo

H. Syncope

I. Cyanosis of lips and nails

J. Dyspnea

K. Delirium

L. Muscle spasm or twitching

M. Dilated pupils

N. Increased respiratory sounds

III. Principles of oxygen administration

A. Oxygen supports combustion; as a result, there is always danger of fire when it is being used

B. Oxygen is essential to sustain life

C. The human body is unable to store oxygen; therefore, an adequate supply must be continually available

D. All oxygen administered therapeutically should be humidified by water, saline, or a medicated solution before entering the respiratory tract

E. The flow rate of oxygen is measured in liters per minute

F. The rate of flow is prescribed by the physician and is determined by the condition of the patient and the method of administration

G. All patients receiving oxygen should be instructed in its use and the necessary safety precautions

(NOTE: Oxygen therapy is sometimes begun as an emergency measure with little time for explanations. However, as soon as possible the patient should be given the necessary explanations.)

INFORMATION SHEET

IV. Types of oxygen supply

  A. Cylinders or tanks

    1. Steel containers with oxygen under pressure of 2000 pounds or more per square inch when full

    2. Valve on top turns oxygen on and off

    3. Every cylinder has a steel cap which screws on to protect the valve (Transparency 1)

    4. Oxygen regulator is attached to the cylinder to deliver the desired rate of flow and to indicate the amount of oxygen in the cylinder (Transparency 2)

  B. Piped-in

    1. Oxygen flows through a pipeline from a central source at a relatively low pressure, 50 to 60 pounds per square inch

    2. Outlet valve is placed in each room or near each bed (Transparency 3)

    3. Other piping outlets, such as vacuum for suction, may be located in the same area (Transparency 3)

    4. Flowmeter must be attached to outlet to use oxygen (Transparency 4)

    (NOTE: As a safety factor, the wall outlets are designed so that only oxygen equipment can be plugged into an oxygen outlet and only vacuum equipment can be plugged into a vacuum valve.)

V. Safety factors to observe when using oxygen

(NOTE: These safety factors and institutional policies are for the protection of patients and personnel.)

  A. Oxygen is potentially dangerous and must be handled with care

  B. Open flames and sparks in the oxygen area should be avoided

  C. Oil and grease should not be used on oxygen cylinders, valves, regulators, or other fittings

  D. All-cotton fabrics are preferable in the area where oxygen is being administered

  (NOTE: Wool, silk, rayon, nylon, and other synthetic fabrics generate static electricity and are dangerous to use.)

INFORMATION SHEET

E. Use of any electrical devices should be avoided or discontinued

(NOTE: Such devices include heating pads, signal cords, razors, radio, electrically controlled beds, and remote controls for television sets.)

F. No Smoking and Oxygen in Use signs must be posted prominently on the door and at the patient's bedside

(NOTE: Visitors and other patients in the room may need to be reminded that the safety regulations must be observed by them.)

G. The regulator on the oxygen administration equipment should be adjusted only by nurses, technicians, or other persons authorized to regulate them

(NOTE: It is part of each nurse's responsibility to enforce this regulation to prevent injury to the patient and others or damage to equipment.)

H. Maintain fluid level in humidifier to ensure adequate moisture to prevent irritation of the mucous membrane

I. Prescribed concentrations of oxygen must be maintained; higher concentrations may cause body injury such as retrolental fibroplasia or damage to lungs or brain

J. Oil, alcohol, or powder should not be used in giving backrubs to patients

VI. Additional safety factors to observe when using oxygen cylinders

A. Handle cylinders with care to avoid damage to the cylinder or valve

(NOTE: The force behind an accidentally opened or broken outlet could cause the cylinder to take off as if it were jet-propelled.)

B. Always transport cylinder securely fastened to a wheeled carrier

C. Strap cylinder to the bed or other stationary object while in use

D. Never place the cylinder near the radiator or other source of heat

E. Obtain a full cylinder for replacement when the gauge on the cylinder in use registers one-fourth full

F. Open the valve on a cylinder slightly and cautiously to clear the outlet of dust before attaching the regulator; be sure outlet is turned away from patient or personnel

(NOTE: When the valve is opened, the escaping oxygen causes a loud hissing sound which is disturbing to the patient. If it must be done at the bedside, explain to the patient what is being done. Use both hands on the valve to keep the release of oxygen to a minimum.)

G. Remove the mask or cannula so the patient can breathe air until oxygen is available if the cylinder becomes empty before a replacement arrives

INFORMATION SHEET

H. Mark a cylinder no longer being used to indicate the amount of oxygen remaining

(NOTE: One method of marking a cylinder is to use a tear-off tag similar to the illustration in Transparency 2.)

VII. Methods of administering oxygen to adults and larger children

A. Nasal cannula (Transparency 5)

1. Provides simplest and best tolerated method of administration
2. Is held in place by an adjustable strap
3. Delivers thirty-five percent concentration at two to four liters per minute

B. Nasal catheter (Transparency 5)

1. Is less comfortable than cannula
2. Delivers forty-two percent concentration of oxygen at four to six liters per minute
3. Lessens irritation of nasal mucous membrane by using a water-soluble lubricant before insertion
4. Remove for cleaning at least once every eight hours

C. Facial mask (Transparency 6)

1. Is available in several types
2. Is usually more comfortable than nasal catheter
3. Delivers ninety-five percent concentration of oxygen at six to eight liters per minute
4. Should be used for patients who breathe primarily through the mouth
5. Interferes with eating, drinking, and talking
6. Requires proper fitting for comfort and to avoid leakage of oxygen

D. Oxygen tent (Transparency 7)

1. Used infrequently except for small children and infants
2. Requires careful planning to provide nursing care without undue waste of oxygen
3. Delivers highest concentration of oxygen
4. Uses larger quantities of oxygen

INFORMATION SHEET

VIII. Methods of administering oxygen to infants and small children

A. Incubator or Isolette

(NOTE: Isolette is a trade name for a self-contained incubator permitting isolation and manipulation of an infant. Because incubators vary, it will be necessary to consult manufacturer's instructions.)

1. Used for premature and small neonates
2. Provides closed system with controlled temperature, humidity, and oxygen
3. Encloses the infant with care given through portholes

B. Bubble or hood

1. Used for newborn and smaller infants who require treatment in addition to controlled temperature, humidity, and oxygen
2. Provides closed system apparatus which covers only the head or the head and shoulders
3. May be used in an incubator or in a crib with a warming unit
4. Limits movements of the child; cannot be used for an older infant who would move about

C. Mist or croupette

1. Used for larger infants and small children
2. Provides humidified, cooled oxygen in a closed system
3. Encloses child and crib; allows for movement of child within a controlled atmosphere
4. Has portholes through which care is given

IX. Devices used for nebulization (Transparency 8)

A. Bulb atomizer or commercially prepared aerosol container

1. Used for brief periods of treatment
2. Provides mist which is inhaled deeply by patient as he squeezes the bulb or presses the release valve

INFORMATION SHEET

B. Large nebulizer in oxygen flowline

1. Holds up to 500 cc of solution
2. Replaces humidifier on oxygen administration setup
3. Provides continuous aerosol therapy
4. Used to administer high humidity oxygen or certain liquid drugs such as antibiotics, bronchodilators, or mucolytic agents

C. Small nebulizer in oxygen flowline

1. Used in addition to humidifier
2. Holds small amount of medication, usually 25 cc
3. Used for intermittent administration of medication
4. Attaches to one extension of a Y-tube that is supplied with oxygen

X. Intermittent positive pressure breathing units (IPPB)

A. Mechanically provides a specific amount of air; air and oxygen; or air, oxygen, and medication under increased pressure

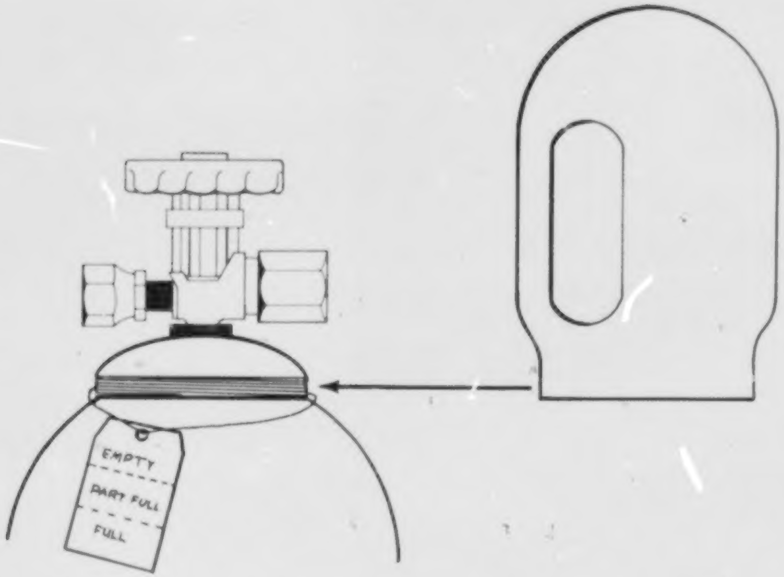
B. Assists breathing by inflating the lungs during inspiration under safe controlled pressure; permits passive exhalation without pressure

C. Provides for regulation of pressure according to individual requirements

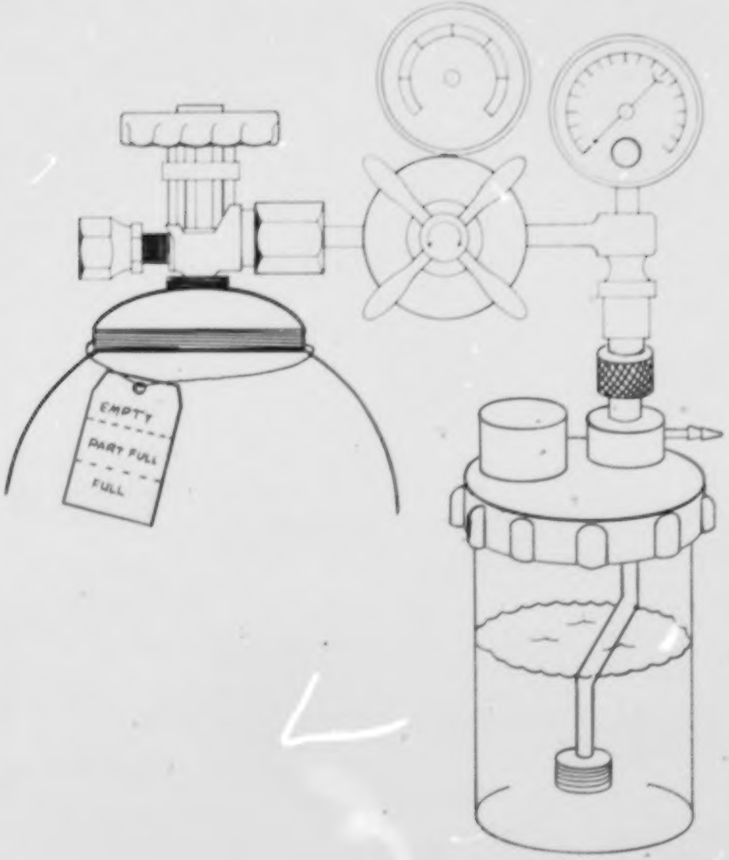
D. May be used to assist breathing in persons with respiratory difficulty, as in respiratory dysfunction or atelectasis

E. Permits controlled ventilation for persons who have no spontaneous respiratory movements, as in brain injuries or respiratory paralysis

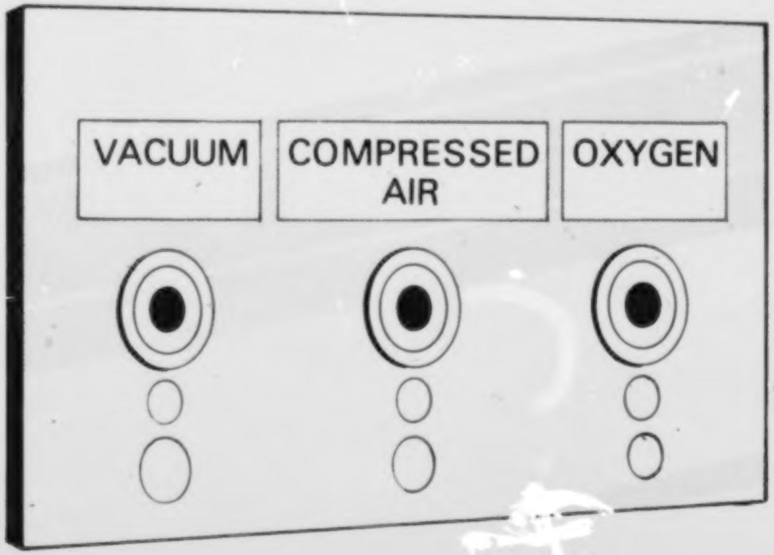
Oxygen Cylinder: Valve and Cap

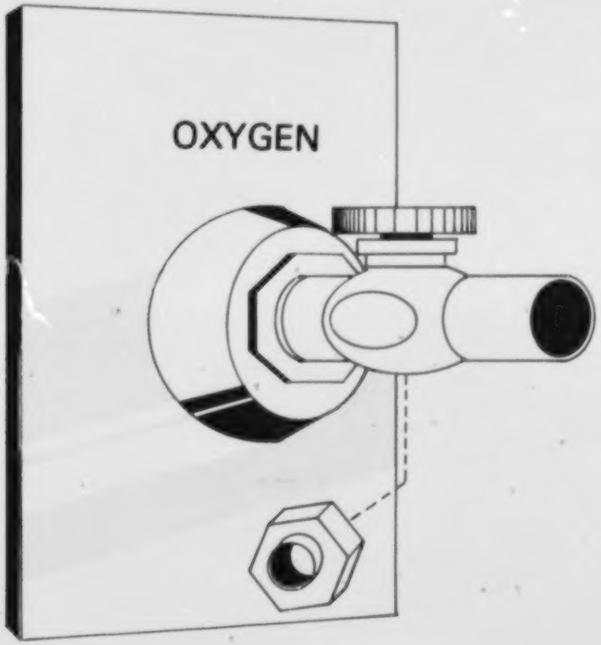

EMPTY
PART FULL
FULL

Oxygen Cylinder: Regulator and Humidifier


EMPTY
PART FULL
FULL

Some Outlets for Piped-in Oxygen

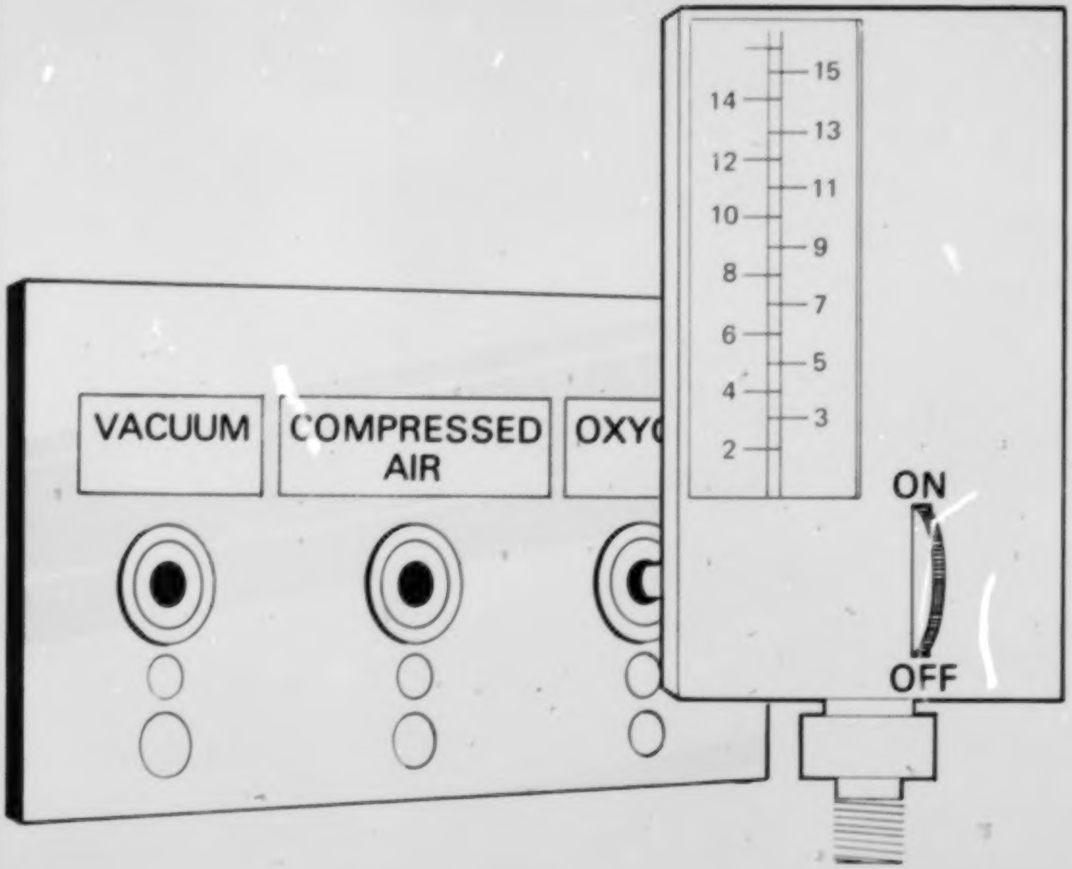

VACUUM
COMPRESSED AIR
OXYGEN



TM 3

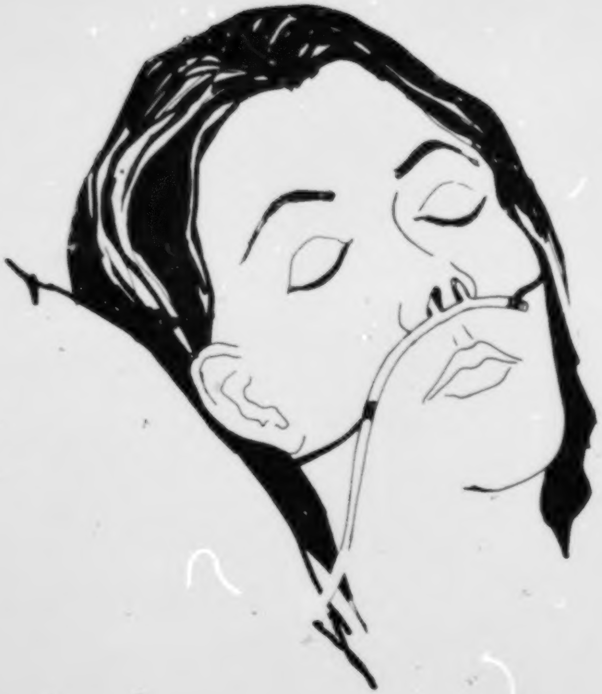
N II - 99-B

Flowmeter for Piped-in Oxygen

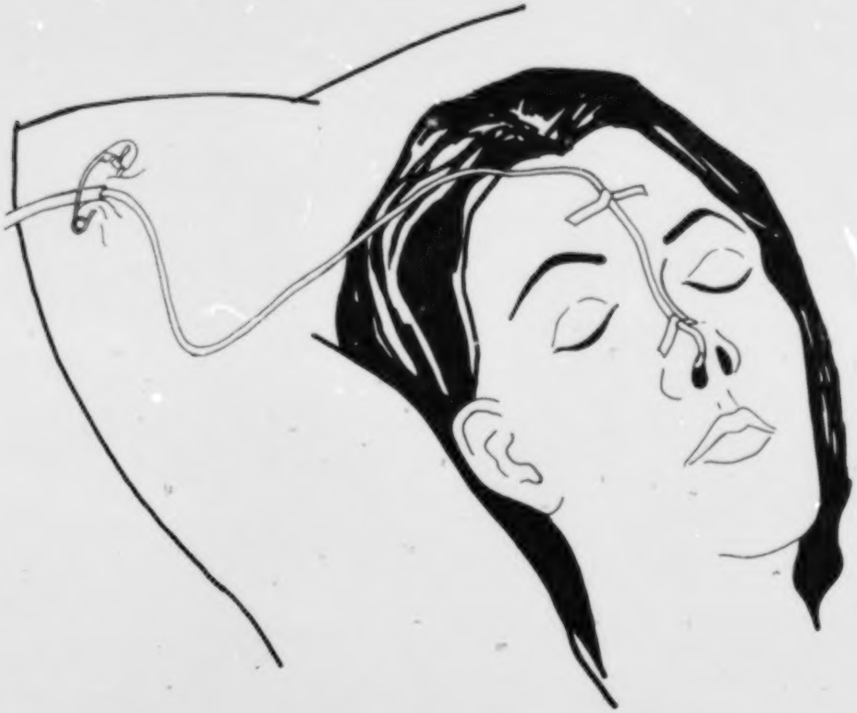

15
14
13
12
11
10
9
8
7
6
5
4
3
2
ON
OFF
VACUUM
COMPRESSED AIR
OXY

N II · 101-B

Nasal Cannula and Catheter

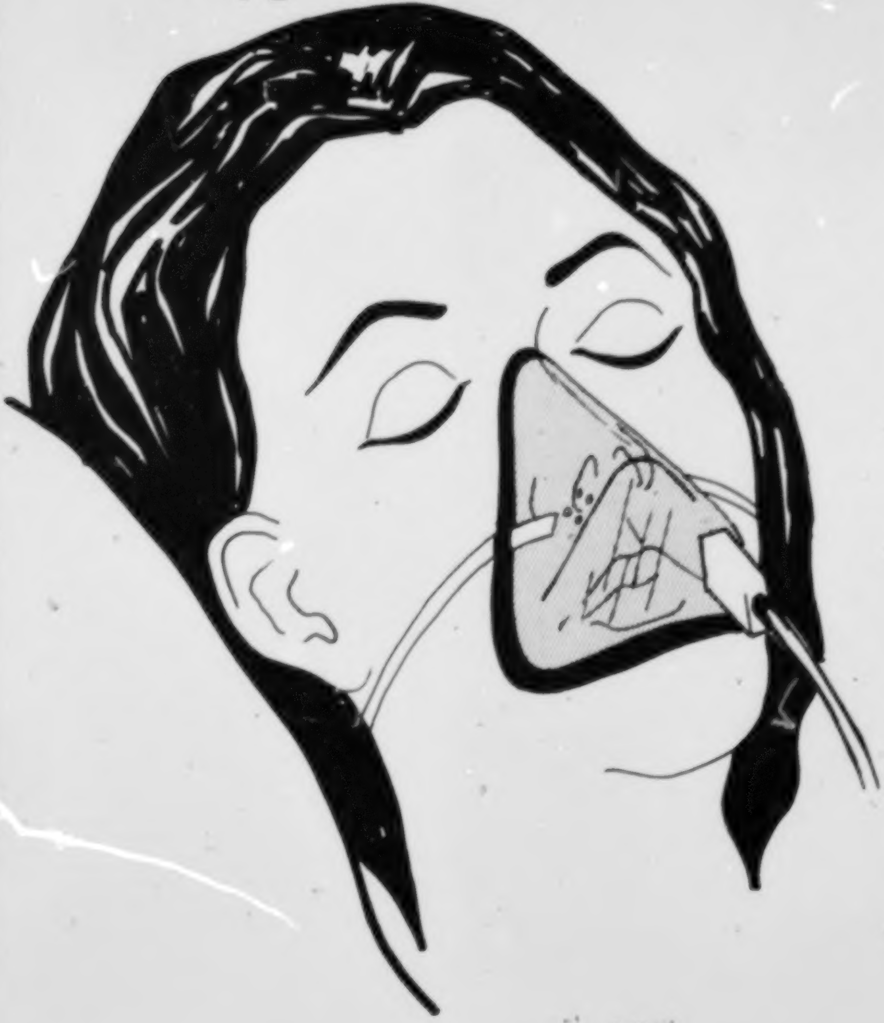


Cannula



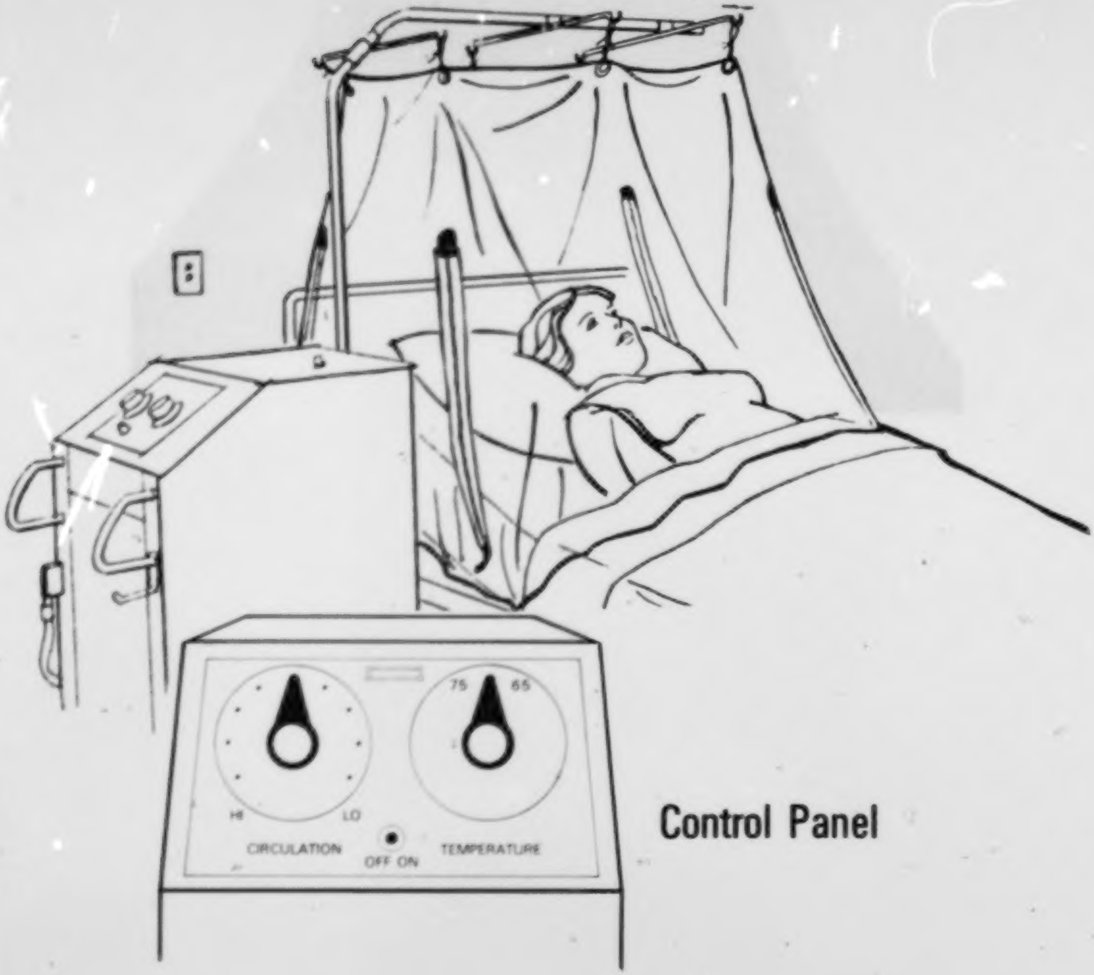
Catheter

Oxygen Mask



N II - 105-B

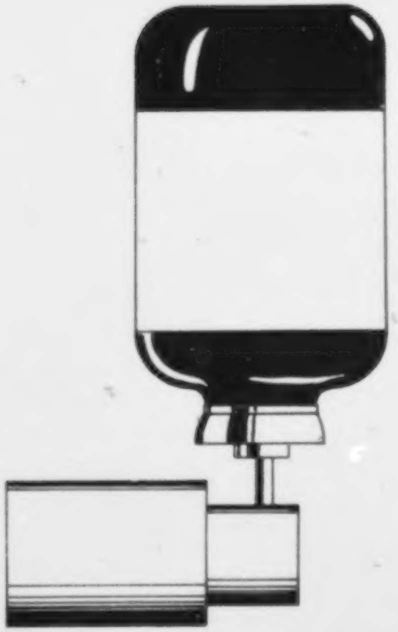
Oxygen Tent

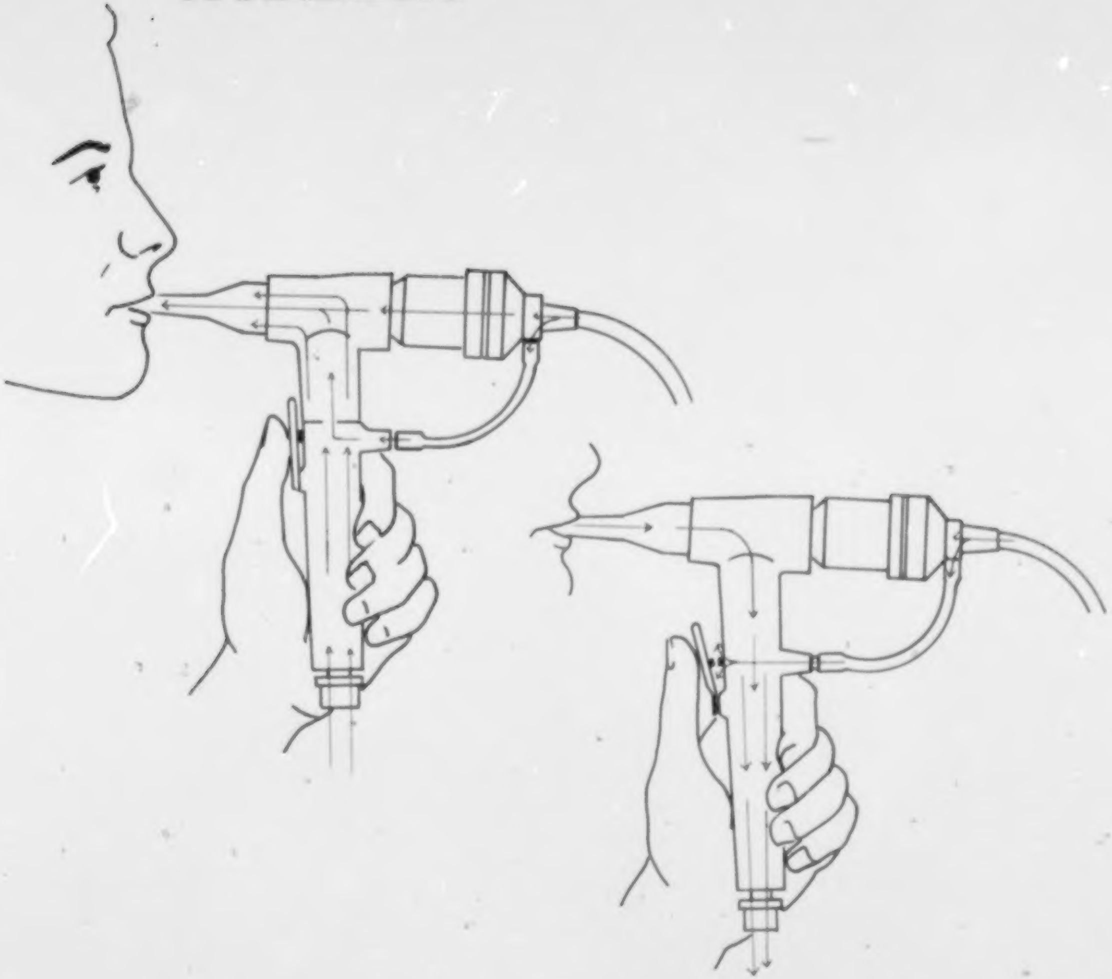

75
65
HI
LO
CIRCULATION
OFF ON
TEMPERATURE

Control Panel

N II - 107-B

Nebulizers





TM 8

409

410

N II - 109-B

ADMINISTRATION OF OXYGEN
UNIT III

JOB SHEET #1--PREPARE AN OXYGEN CYLINDER FOR USE

I. Equipment

- A. Cylinder of oxygen
- B. Regulator
- C. Wrench
- D. Humidifier
- E. Tubing

II. Procedure to prepare for use

- A. Assemble equipment
- B. Remove protective cap from cylinder
- C. Open cylinder valve slightly for a very short time (Figure 1)

  (NOTE: This is called "cracking" the valve and it blows out any dust particles which may have collected.)

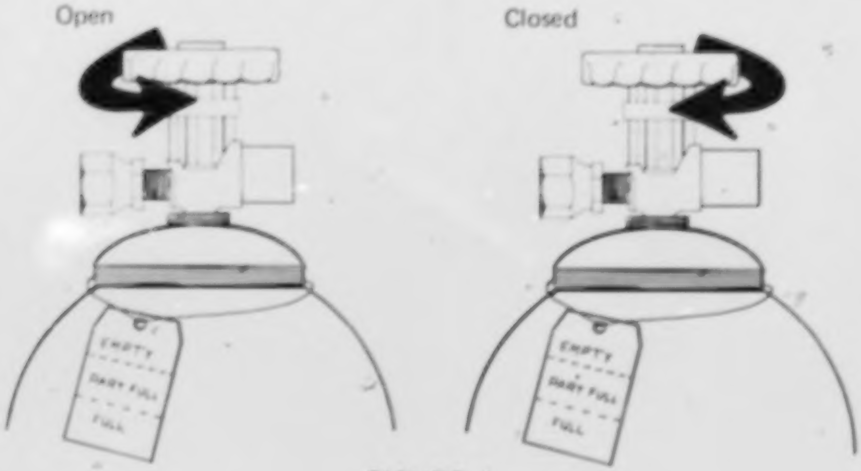


FIGURE 1

- D. Connect the regulator to the cylinder outlet on the cylinder valve

  (NOTE: See Figure 2 on the following page.)

JOB SHEET #1

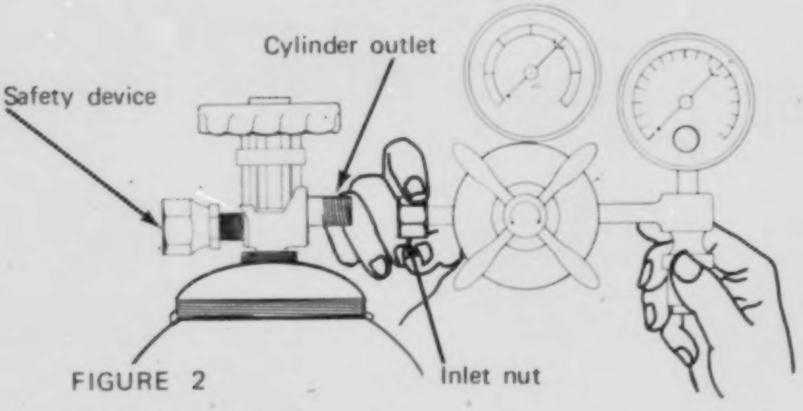

Cylinder outlet
Safety device
Inlet nut

FIGURE 2

E. Tighten the inlet nut with a wrench (Figure 3)

(NOTE: The wrench is usually fastened to the oxygen carrier with a length of chain.)

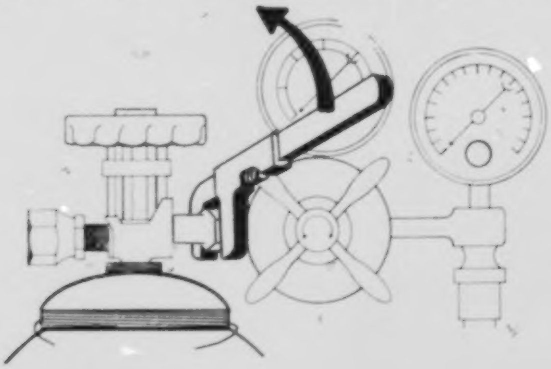


FIGURE 3

F. Turn the flow-adjusting valve to "OFF" position (Figure 4)

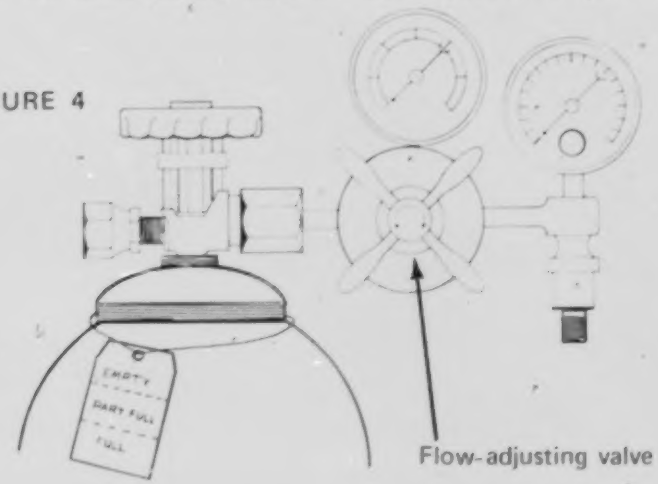

EMPTY
PART FULL
FULL
Flow-adjusting valve

FIGURE 4

JOB SHEET #1

G. Remove the cover from the humidifier

H. Fill humidifier with distilled water to the indicated water level

(NOTE: If there is no water level mark, fill the humidifier half full.)

I. Replace the cover on the humidifier

J. Attach the humidifier to the regulator (Figure 5)

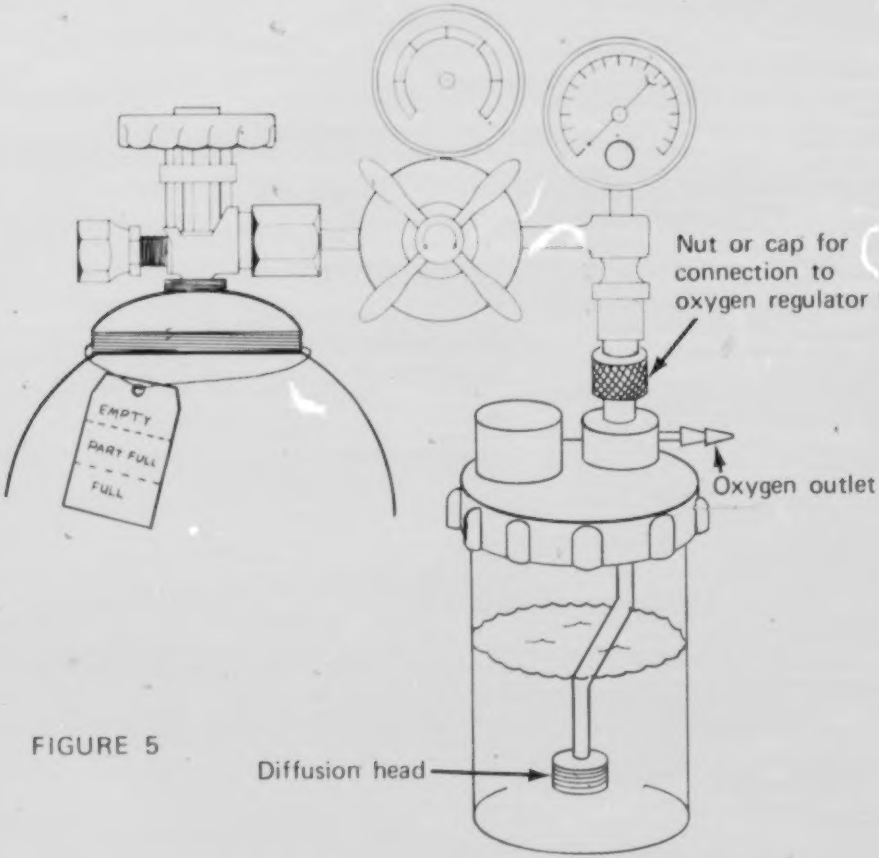

EMPTY
PART FULL
FULL
Nut or cap for connection to oxygen regulator
Oxygen outlet
Diffusion head

FIGURE 5

K. Attach the tubing to the oxygen outlet

L. Open the cylinder valve very slowly to avoid damaging the regulator

(NOTE: See Figure 6 on the following page.)

JOB SHEET #1

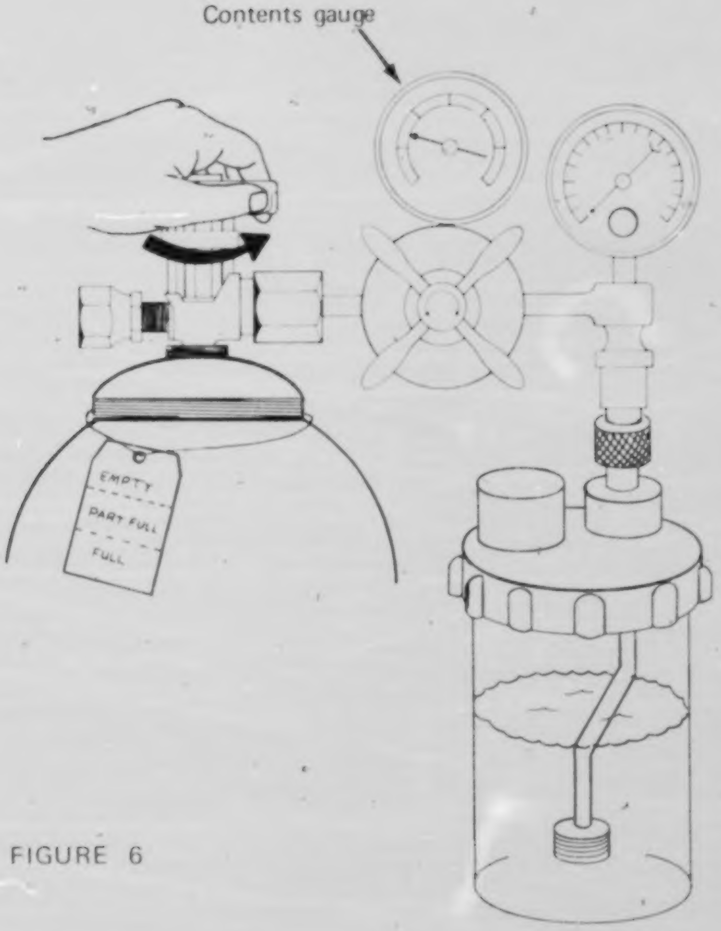

Contents gauge
EMPTY
PART FULL
FULL

FIGURE 6

M. Turn the flow-adjusting valve to the "ON" position

(NOTE: See Figure 7 on the following page.)

N. Continue turning the flow-adjusting valve until the flowmeter registers the prescribed number of liters per minute

(NOTE: The cylinder and regulator are now ready for use.)

JOB SHEET #1

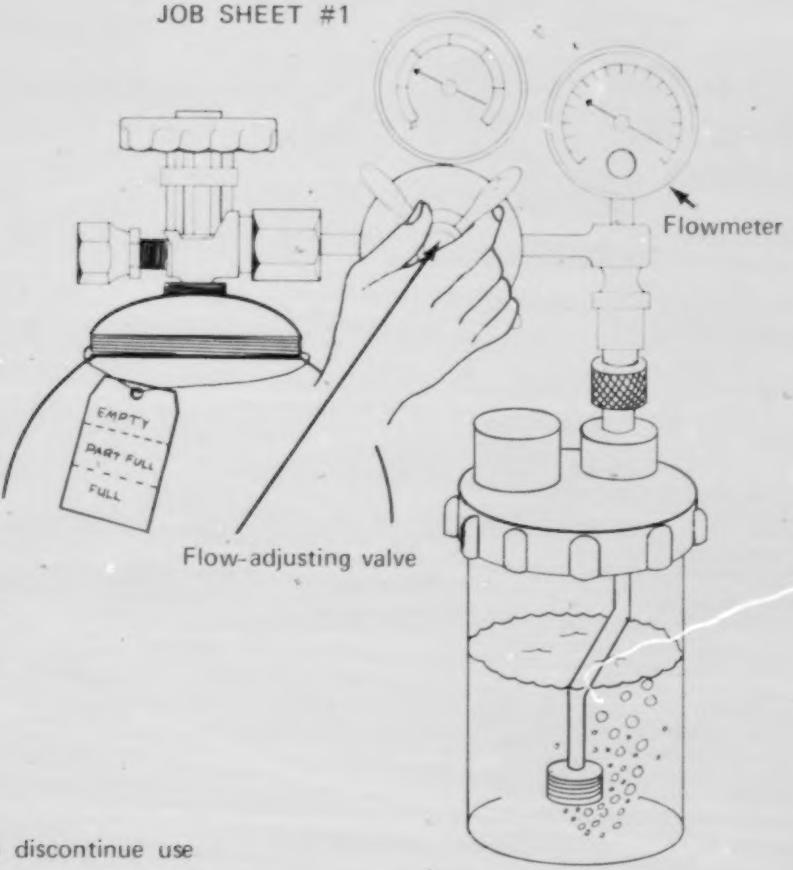


FIGURE 7

III. Procedure to discontinue use

(NOTE: Follow this procedure when oxygen use is to be discontinued for thirty minutes or more and/or when the regulator is to be removed from the cylinder.)

A. Close the cylinder valve tightly

B. Wait until the flowmeter and the cylinder contents gauge have returned to zero

C. Close the flow-adjusting valve

D. Remove the humidifier

E. Loosen the inlet nut with the wrench

F. Remove the regulator

G. Replace the protective cap

H. Clean and return the equipment to the proper place

ADMINISTRATION OF OXYGEN
UNIT III

JOB SHEET #2--PREPARE FOR OXYGEN ADMINISTRATION USING PIPED-IN OXYGEN

I. Equipment

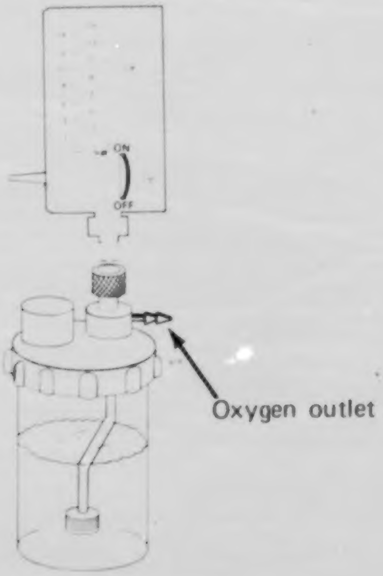
- A. Flowmeter
- B. Humidifier
- C. Tubing

II. Procedure to prepare for use

- A. Assemble equipment
- B. Remove the cover on the humidifier
- C. Fill the humidifier with distilled water to the prescribed level

  (NOTE: If there is no water-level mark, fill the humidifier half full.)
- D. Replace the cover on the humidifier
- E. Attach the humidifier to the flowmeter (Figure 1)

FIGURE 1



JOB SHEET #2

F. Take equipment to patient's unit

G. Turn the flow-adjusting valve to the "OFF" position (Figure 2)

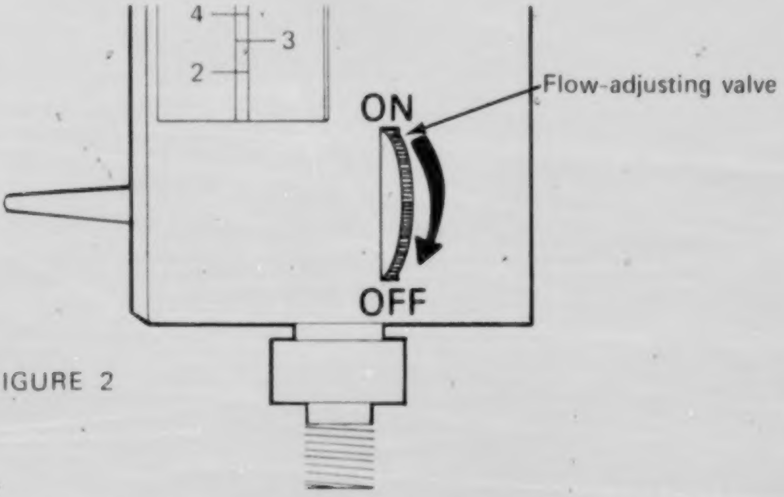

4
3
2
Flow-adjusting valve
ON
OFF

FIGURE 2

H. Insert the flowmeter adapter into the opening of the outlet, pressing firmly to secure until it snaps into place (Figure 3)

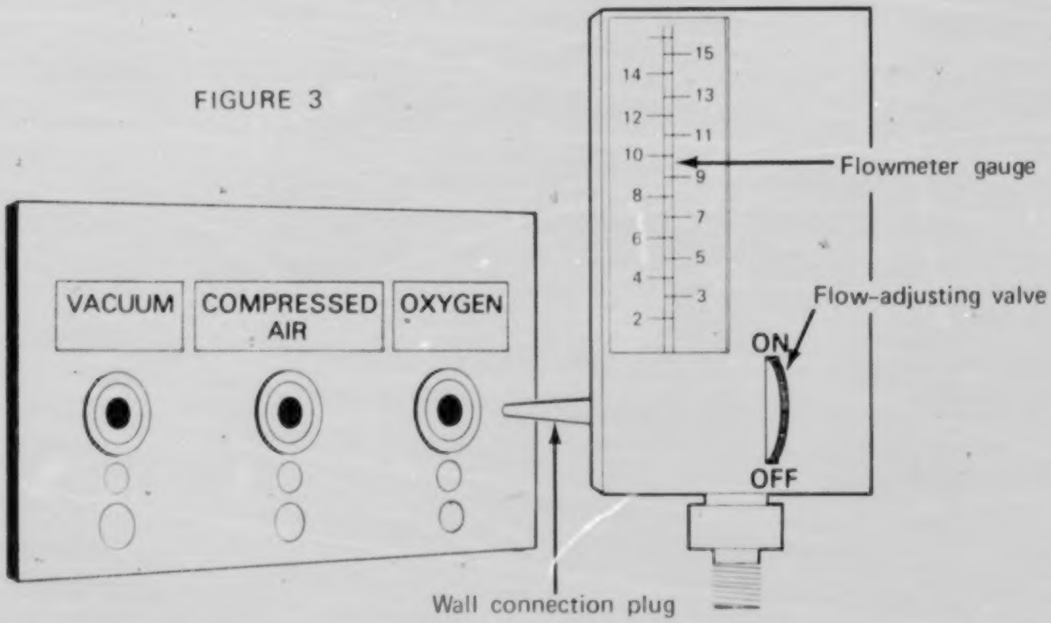

15
14
13
12
11
10
9
8
7
6
5
4
3
2
Flowmeter gauge
Flow-adjusting valve
ON
OFF
VACUUM
COMPRESSED AIR
OXYGEN
Wall connection plug

FIGURE 3

JOB SHEET #2

I. Attach the tubing to the oxygen outlet (Figure 4)

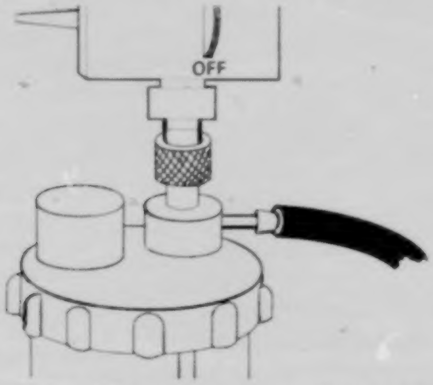


FIGURE 4

J. Slowly open the flow-adjustment valve until the desired flow is obtained (NOTE: The oxygen is now ready for use.)

III. Procedure to discontinue use

A. Turn the flow-adjusting valve to "OFF"

B. Wait until the gauge drops to zero

C. Remove the flowmeter from the outlet by releasing the locking mechanism

D. Clean and return equipment to proper place

ADMINISTRATION OF OXYGEN
UNIT III

JOB SHEET #3--USE A NASAL CANNULA

I. Equipment

- A. Oxygen setup

  (NOTE: Prepare oxygen setup using instructions on Job Sheet #1 or #2.)

- B. Nasal cannula

II. Procedure

- A. Check physician's order for details
- B. Wash hands
- C. Assemble equipment and take to patient's unit
- D. Identify patient and explain procedure
- E. Start the flow of oxygen at about three liters
- F. Apply the nasal cannula and adjust for patient's comfort (Transparency 5)
- G. Adjust the rate of flow to the prescribed number of liters per minute
- H. Check frequently for
  1. Position of the cannula
  2. Rate of flow of oxygen
  3. Water level in the humidifier
  4. Patency of tubing
  5. Leaks in connections
  6. Quantity of oxygen remaining in cylinders
- I. Remove and clean cannula at least once every eight hours
- J. Record and report
  1. Time
  2. Rate of flow
  3. Patient response

JOB SHEET #3

K. Discontinue use

   1. Remove the nasal cannula
   2. Shut off the oxygen supply
   3. Clean and return equipment to proper place

L. Record time oxygen is discontinued

ADMINISTRATION OF OXYGEN
UNIT III

JOB SHEET #4--INSERT A NASAL CATHETER

I. Equipment

  A. Oxygen setup

  (NOTE: Prepare oxygen setup using instructions on Job Sheet #1 or #2.)

  B. Nasal catheter

  C. Tape

  D. Safety pin

  E. Connector

  F. Glass of water

  G. Tongue depressor

  H. Flashlight

II. Procedure

  A. Check physician's order

  B. Wash hands

  C. Assemble equipment and take to patient's unit

  D. Identify patient and explain procedure

  E. Connect the catheter to the tubing using the connector

  F. Start the oxygen flow at about three liters

  (NOTE: See Figure 1 on the following page.)

JOB SHEET #4

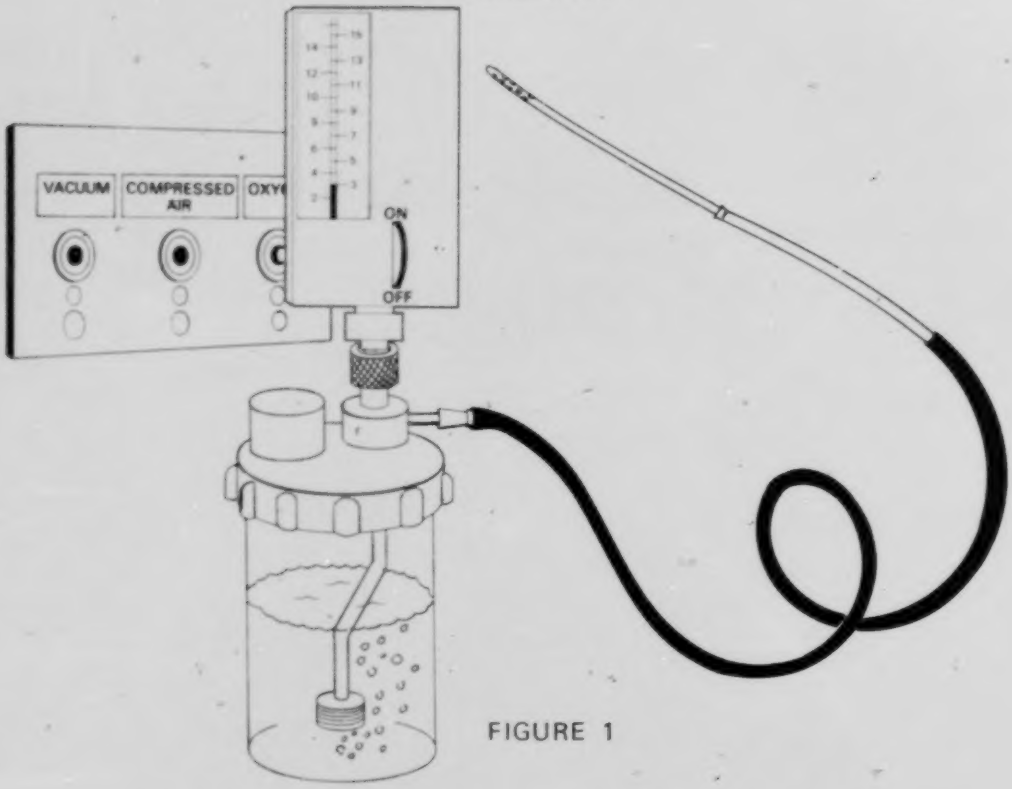
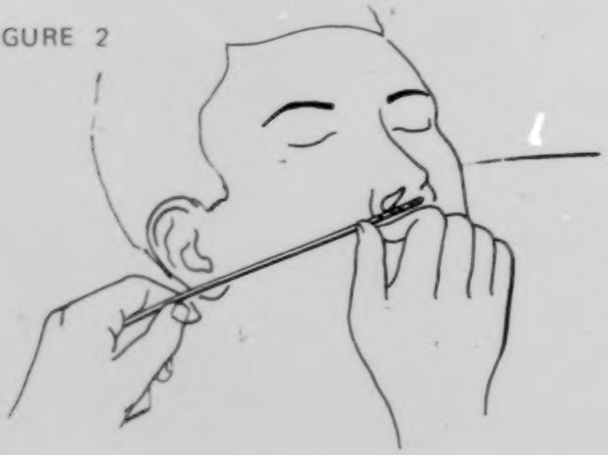

VACUUM
COMPRESSED AIR
OXY
ON
OFF

FIGURE 1

G. Determine the approximate depth to which the catheter is to be inserted by measuring the distance from the tip of the nose to the ear lobe (Figure 2)

FIGURE 2



JOB SHEET #4

H. Place the tip of the catheter in a glass of water to make certain the oxygen is flowing through it and to moisten it (Figure 3)

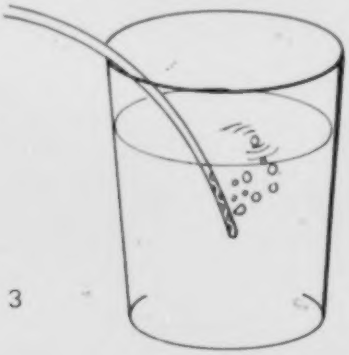


FIGURE 3

I. Determine the natural droop of the catheter by holding it between the thumb and forefinger; rotate it slowly until the tip hangs at its lowest level (Figure 4)

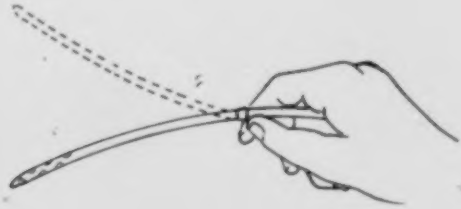


FIGURE 4

J. Insert the catheter to the measured depth slowly and gently

(NOTE: It will be easier to insert the catheter if the tip of the patient's nose is elevated as in Figure 5. Do not force the catheter if any obstruction is met.)

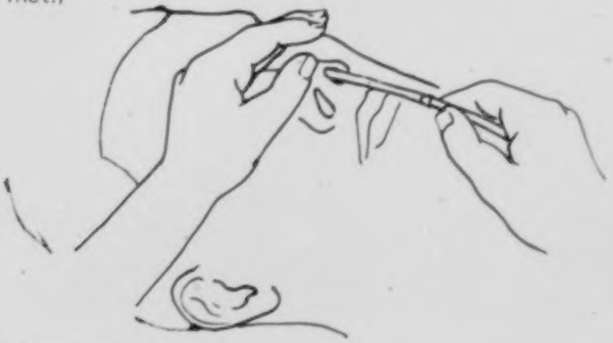


FIGURE 5

JOB SHEET #4

K. Use a tongue depressor and flashlight to check the position of the catheter through the patient's open mouth (Figure 6)

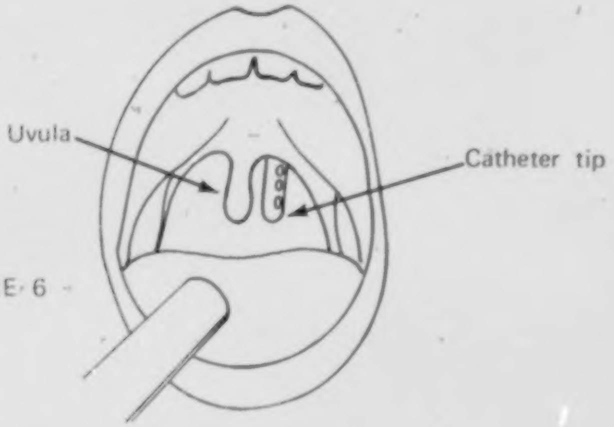


FIGURE 6

L. Withdraw catheter slightly (Figure 7)

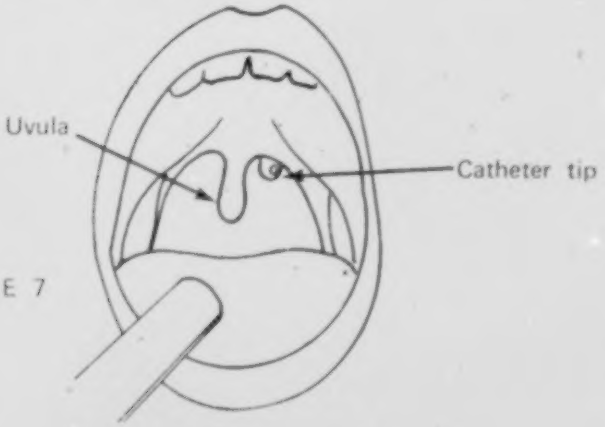


FIGURE 7

M. Fasten catheter in place with tape

N. Adjust the rate of flow to prescribed number of liters

O. Secure tubing to the bedclothes with a safety pin

P. Check the tubing to see that it is not twisted

(NOTE: A whistle indicates oxygen flow is obstructed.)

Q. Leave enough slack in the tubing so that the patient can move about

R. Insert a fresh catheter every eight hours, alternating nostrils if possible; remove catheter gently

JOB SHEET #4

S. Check frequently for
  1. Position of the nasal catheter
  2. Rate of flow of oxygen
  3. Water level in the humidifier
  4. Patency of tubing
  5. Leaks in connections
  6. Quantity of oxygen remaining in cyclinders

T. Record and report
  1. Time
  2. Rate of flow
  3. Patient response

U. Discontinue use
  1. Remove nasal catheter gently
  2. Shut off oxygen supply
  3. Clean and return equipment to proper place

V. Record time oxygen is discontinued

ADMINISTRATION OF OXYGEN
UNIT III

JOB SHEET #5--USE AN OXYGEN MASK

I. Equipment

   A. Oxygen setup

      (NOTE: Prepare oxygen setup using instructions on Job Sheet #1 or #2.)

   B. Face mask (Transparency 6)

II. Procedure

   A. Check physician's order

   B. Wash hands

   C. Assemble equipment and take to patient's unit

   D. Identify patient and explain procedure

   E. Attach the tubing from the face mask to the oxygen outlet

   F. Start the oxygen flow at a high rate, 14 to 15 liters per minute

      (NOTE: Most patients breathe more deeply and rapidly when the mask is first applied. If the oxygen flow is initially too low, the patient may not be getting enough oxygen.)

   G. Adjust the face mask

   H. Secure the straps so the mask fits snugly but not tight enough to hamper circulation

   I. Check for leaking of oxygen around the edges of the mask; if necessary, place a piece of dampened gauze or cotton in leaking areas

   J. Readjust the rate of flow to the prescribed level

   K. Remove the mask every two hours to sponge and dry the patient's face

   L. Check frequently for

      1. Position of face mask

      2. Rate of flow of oxygen

      3. Water level in the humidifier

JOB SHEET #5

4. Patency of tubing
5. Leaks in connections
6. Quantity of oxygen remaining in cylinders

M. Record and report

1. Time
2. Rate of flow
3. Patient response

N. Clean and replace equipment as necessary

(NOTE: Since there are many types of oxygen masks, it is the responsibility of each nurse to learn about those in use in the health care facility.)

O. Discontinue use

1. Remove mask
2. Shut off oxygen supply
3. Clean and return equipment to proper place

P. Record time oxygen is discontinued

ADMINISTRATION OF OXYGEN
UNIT III

JOB SHEET #6--USE A NEBULIZER

I. Equipment

  A. Oxygen setup

  (NOTE: Prepare oxygen setup using instructions on Job Sheet #1 or #2.)

  B. Nebulizer

  C. Medication

  D. Y-tube

  E. Short piece of rubber or flexible plastic tubing

II. Procedure

  A. Check physician's order

  B. Wash hands

  C. Assemble equipment

  D. Prepare medication as prescribed

  E. Identify patient and explain procedure

  F. Place Y-tube in end of oxygen tubing

  G. Connect nebulizer to one arm of Y-tube, using short piece of rubber tubing

  H. Remove stoppers from nebulizer

  I. Place medication in nebulizer

  J. Start flow of oxygen at rate of 4 liters

JOB SHEET #6

K. Instruct patient to

1. Hold nebulizer in one hand
2. Place open end of nebulizer in mouth
3. Cover free end of Y-tube with thumb while inhaling (Figure 1)

   (NOTE: Closing the Y-tube forces the oxygen through the nebulizer converting the medication to vapor.)
4. Remove thumb from Y-tube when exhaling to avoid wasting medication (Figure 2)

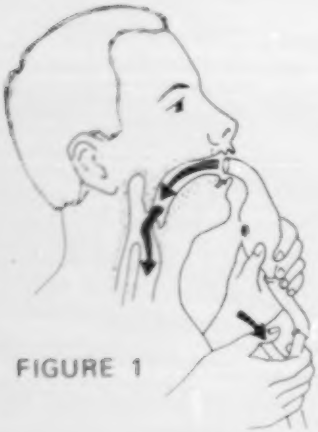


FIGURE 1

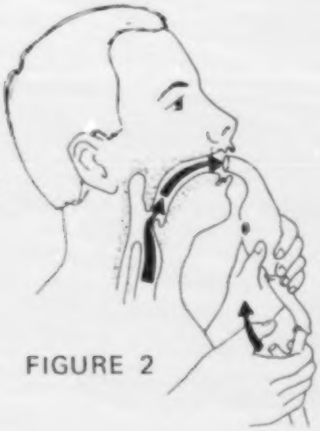


FIGURE 2

L. Continue treatment as prescribed

M. Turn off oxygen when treatment is finished

N. Clean and return equipment to proper place

O. Wash hands

P. Report and record

ADMINISTRATION OF OXYGEN
UNIT III

JOB SHEET #7--PREPARE AND USE AN OXYGEN TENT

I. Equipment

  A. Canopy

  B. Control cabinet

II. Procedure

  A. Check physician's order

  B. Wash hands

  C. Obtain equipment

  D. Identify the patient and explain the procedure

  E. Provide privacy

  F. Assemble the oxygen tent

    1. Move the tent to the head of the bed with the regulating dials facing away from the bed

    2. Connect the oxygen supply to the cabinet

    3. Plug the cord from the cabinet into an electrical outlet

    4. Turn the motor on and set the control knobs on the control panel

    5. Set temperature at 70° or as prescribed

    6. Adjust oxygen flow at 15 liters per minute for the first 15 to 30 minutes

  G. Arrange the canopy over the patient and upper part of the bed

  H. Tuck the canopy under the mattress at the top and sides

  I. Use a sheet to secure the edge of the canopy across the bed and patient's body

  J. Place manual call bell inside the tent

  K. Close all openings in the canopy

JOB SHEET #7

L. Analyze oxygen concentration in 15 to 30 minutes

(NOTE: Use oxygen analyzer according to manufacturer's instructions.)

M. Adjust the rate of oxygen flow to maintain the desired concentration, usually 10 to 12 liters per minute

N. Check patient and equipment frequently during treatment

1. Reassure him
2. Assess his condition
3. Maintain desired temperature

   (NOTE: Provide covering as needed for comfort.)

4. Maintain oxygen concentration

   (NOTE: The minimum flow required to wash out and dilute exhaled carbon dioxide is 10 liters per minute.)

5. Monitor functioning of equipment

O. Maintain therapy

1. Open tent only as required
2. Make temperature and oxygen adjustments while the compressor unit is running
3. Check oxygen supply as needed
4. Analyze oxygen concentration every four hours and after tent has been opened for any period of time

P. Record procedure

1. Time
2. Method
3. Level of oxygen flow
4. Response of patient

ADMINISTRATION OF OXYGEN
UNIT III

TEST

1. Match the terms on the right to the correct definition.

_____a. Oxygen tent with humidification to be used for an infant or child

_____b. Dissolving or liquifying mucus

_____c. Amount of oxygen supplied during each minute of administration

_____d. Canopy of lightweight, supple, transparent material which encloses the upper part of a patient's body and bed; used to administer oxygen

_____e. Disposable plastic device which has two protruding prongs for insertion into the nostrils and is used to administer oxygen

_____f. Electricity produced by friction

_____g. Device for measuring the rate of flow of a gas or liquid

_____h. Plastic device of varying sizes and shapes made to fit over the nose and mouth for the administration of oxygen

_____i. Plastic tube with rounded tip for insertion into the nasopharynx or oropharynx for administration of oxygen

_____j. Container, usually a glass jar, attached to oxygen equipment to increase moisture content of oxygen during administration

_____k. Mechanical device used on an oxygen cylinder with one gauge to show how much oxygen the tank contains and a second gauge to show the rate of flow

_____l. Retinal damage in premature infants following administration of a high concentration of oxygen

1. Facial mask
2. Humidifier
3. Static electricity
4. Mucolytic
5. Regulator
6. Retrolental fibroplasia
7. Nasal catheter
8. Nasal cannula
9. Oxygen tent
10. Flowmeter
11. Flow rate
12. Croupette

2. List eight signs or symptoms of hypoxia or oxygen deficiency.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

3. List four principles of oxygen administration.

   a.

   b.

   c.

   d.

4. Describe the two types of oxygen supply.

   a.

   b.

5. List six safety factors to observe when using oxygen.

   a.

b.

c.

d.

e.

f.

6. List six additional safety factors to observe when using oxygen in cylinders.

a.

b.

c.

d.

e.

f.

7. Describe four methods of administering oxygen to adults and larger children.

a.

b.

8. Describe three methods of administering oxygen to infants and small children.

   a.

   b.

   c.

9. Describe three devices used for nebulization.

   a.

   b.

   c.

10. Discuss the use of intermittent positive pressure breathing units.

11. Demonstrate the ability to:

    a. Prepare an oxygen cylinder for use.

    b. Prepare for oxygen administration using piped-in oxygen.

    c. Use a nasal cannula.

    d. Insert a nasal catheter.

    e. Use an oxygen mask.

    f. Use a nebulizer.

    g. Prepare and use an oxygen tent.

    (NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

ADMINISTRATION OF OXYGEN
UNIT III

ANSWERS TO TEST

1. a. 12
   b. 4
   c. 11
   d. 9
   e. 8
   f. 3
   g. 10
   h. 1
   i. 7
   j. 2
   k. 5
   l. 6

2. Any eight of the following:
   a. Restlessness, irritability, or anxiety
   b. Yawning
   c. Headache
   d. Increased pulse rate
   e. Irregular respirations
   f. Decreased coordination or awareness
   g. Vertigo
   h. Syncope
   i. Cyanosis of lips and nails
   j. Dyspnea
   k. Delirium
   l. Muscle spasm or twitching
   m. Dilated pupils
   n. Increased respiratory sounds

3. Any four of the following:
   a. Oxygen supports combustion; as a result, there is always danger of fire when it is being used
   b. Oxygen is essential to sustain life

c. The human body is unable to store oxygen; therefore, an adequate supply must be continually available

d. All oxygen administered therapeutically should be humidified by water, saline, or a medicated solution before entering the respiratory tract

e. The flow rate of oxygen is measured in liters per minute

f. The rate of flow is prescribed by the physician and is determined by the condition of the patient and the method of administration

g. All patients receiving oxygen should be instructed in its use and the necessary safety precautions

4. Description should include:

a. Cylinders or tanks

1) Steel containers with oxygen under pressure of 2000 pounds or more per square inch when full

2) Valve on top turns oxygen on and off

3) Every cylinder has a steel cap which screws on to protect the valve

4) Oxygen regulator is attached to the cylinder to deliver the desired rate of flow and to indicate the amount of oxygen in the cylinder

b. Piped-in

1) Oxygen flows through a pipeline from a central source at a relatively low pressure, 50 to 60 pounds per square inch

2) Outlet valve is placed in each room or near each bed

3) Other piping outlets, such as vacuum for suction, may be located in the same area

4) Flowmeter must be attached to outlet to use oxygen

5. Any six of the following:

a. Oxygen is potentially dangerous and must be handled with care

b. Open flames and sparks in the oxygen area should be avoided

c. Oil and grease should not be used on oxygen cylinders, valves, regulators, or other fittings

d. All-cotton fabrics are preferable in the area where oxygen is being administered

e. Use of any electrical devices should be avoided or discontinued

- f. No Smoking and Oxygen in Use signs must be posted prominently on the door and at the patient's bedside
- g. The regulator on the oxygen administration equipment should be adjusted only by nurses, technicians, and other persons authorized to regulate them
- h. Maintain fluid level in humidifier to ensure adequate moisture to prevent irritation of the mucous membrane
- i. Prescribed concentrations of oxygen must be maintained; higher concentrations may cause body injury such as retrolental fibroplasia or damage to lungs or brain
- j. Oil, alcohol, or powder should not be used in giving backrubs to patients

6. Any six of the following:
   - a. Handle cylinders with care to avoid damage to the cylinder or valve
   - b. Always transport cylinder securely fastened to a wheeled carrier
   - c. Strap cylinder to the bed or other stationary object while in use
   - d. Never place the cylinder near the radiator or other source of heat
   - e. Obtain a full cylinder for replacement when the gauge on the cylinder in use registers one-fourth full
   - f. Open the valve on a cylinder slightly and cautiously to clear the outlet of dust before attaching the regulator; be sure outlet is turned away from patient or personnel
   - g. Remove the mask or cannula so the patient can breathe air until oxygen is available if the cylinder becomes empty before a replacement arrives
   - h. Mark a cylinder no longer being used to indicate the amount of oxygen remaining

7. Description should include:
   - a. Nasal cannula
     - 1) Provides simplest and best tolerated method of administration
     - 2) Is held in place by an adjustable strap
     - 3) Delivers thirty-five percent concentration at two to four liters per minute
   - b. Nasal catheter
     - 1) Is less comfortable than cannula
     - 2) Delivers forty-two percent concentration of oxygen at four to six liters per minute

3) Lessens irritation of nasal mucous membrane by using a water-soluble lubricant before insertion

4) Remove for cleaning at least once every eight hours

c. Facial mask

1) Is available in several types

2) Is usually more comfortable than nasal catheter

3) Delivers ninety-five percent concentration of oxygen at six to eight liters per minute

4) Should be used for patients who breathe primarily through the mouth

5) Interferes with eating, drinking, and talking

6) Requires proper fitting for comfort and to avoid leakage of oxygen

d. Oxygen tent

1) Used infrequently except for small children and infants

2) Requires careful planning to provide nursing care without undue waste of oxygen

3) Delivers highest concentration of oxygen

4) Uses larger quantities of oxygen

8. Description should include:

a. incubator or Isolette

1) Used for premature and small neonates

2) Provides closed system with controlled temperature, humidity, and oxygen

3) Encloses the infant with care given through portholes

b. Bubble or hood

1) Used for newborn and smaller infants who require treatment in addition to controlled temperature, humidity, and oxygen

2) Provides closed system apparatus which covers only the head or the head and shoulders

3) May be used in an incubator or in a crib with a warming unit

4) Limits movements of the child; cannot be used for an older infant who would move about

c. Mist or croupette

   1) Used for larger infants and small children

   2) Provides humidified, cooled oxygen in a closed system

   3) Encloses child and crib; allows for movement of child within a controlled atmosphere

   4) Has portholes through which care is given

9. Description should include:

a. Bulb atomizer or commercially prepared aerosol container

   1) Used for brief periods of treatment

   2) Provides mist which is inhaled deeply by patient as he squeezes the bulb or presses the release valve

b. Large nebulizer in oxygen flowline

   1) Hold ups to 500 cc of solution

   2) Replaces humidifier on oxygen administration setup

   3) Provides continuous aerosol therapy

   4) Used to administer high humidity oxygen or certain liquid drugs such as antibiotics, bronchodilators, or mucolytic agents

c. Small nebulizer in oxygen flowline

   1) Used in addition to humidifier

   2) Holds small amount of medication, usually 25 cc

   3) Used for intermittent administration of medication

   4) Attaches to one extension of a Y-tube that is supplied with oxygen

10. Discussion should include:

a. Mechanically provides a specific amount of air; air and oxygen; or air, oxygen, and medication under increased pressure

b. Assists breathing by inflating the lungs during inspiration under safe controlled pressure; permits passive exhalation without pressure

c. Provides for regulation of pressure according to individual requirements

d. May be used to assist breathing in persons with respiratory difficulty, as in respiratory dysfunction or atelectasis

   e. Permits controlled ventilation for persons who have no spontaneous respiratory movements, as in brain injuries or respiratory paralysis

11. Performance skills will be evaluated to the satisfaction of the instructor.

URINARY CATHETERIZATION
UNIT IV

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list purposes of catheterization and identify types of catheters. The student should be able to list reasons for an indwelling catheter and nursing measures to induce urination. The student should be able to discuss physiological principles and nursing responsibilities pertaining to catheterization and demonstrate the ability to catheterize a patient. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with catheterization to the correct definitions.
2. List six nursing measures which may induce urination.
3. List four purposes of catheterization.
4. List materials used in making catheters.
5. List sizes of catheters to use.
6. Identify types of catheters.
7. List four reasons for an indwelling catheter.
8. Discuss physiological principles and nursing responsibilities of catheterization pertaining to safety, comfort, effectiveness, economy, and neatness.
9. Demonstrate the ability to catheterize a patient.

URINARY CATHETERIZATION
UNIT IV

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and job sheets.

   C. Discuss terminal and specific objectives.

   D. Discuss information sheet.

   E. Demonstrate and discuss the procedures outlined on the job sheets.

      (NOTE: Since institutional policies vary, it will be the responsibility of the instructor to decide whether the student should be able to catheterize both sexes.)

   F. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Demonstrate the ability to accomplish the procedure(s) outlined on the job sheet(s)

   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Transparency masters

      1. TM 1--Straight Catheters

      2. TM 2--Coude' and Olive Tip Catheters

3. TM 3--Indwelling Catheters
4. TM 4--Cross Section of a Male Pelvis
5. TM 5--Cross Section of a Female Pelvis

D. Job sheets

1. Job Sheet #1a--Catheterize a Female Patient
2. Job Sheet #1b--Catheterize a Male Patient

E. Test

F. Answers to test

II. References:

A. Brunner, Lillian S. et al. *The Lippincott Manual of Nursing Practice.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1974.

B. Cherescavich, Gertrude D. *A Textbook for Nursing Assistants.* St. Louis, Missouri: The C. V. Mosby Company, 1973.

C. Fuerst, Elinor V. et al. *Fundamentals of Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1974.

D. Rapier, Dorothy K. et al. *Practical Nursing.* St. Louis, Missouri: The C. V. Mosby Company, 1970.

E. Sutton, Audrey L. *Bedside Nursing Techniques.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

F. Thompson, Ella M. and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

G. Garner, Julia S. "Urinary Catheter Care." *Nursing 74,* February 1974.

III. Other materials:

A. Filmstrips

1. "Urinary Care." Trainex Corporation.
2. "Important Procedures in Asepsis: IV Fluid Therapy and Urinary Drainage." Trainex Corporation.
3. "Urinary Catheterization." Trainex Corporation.
4. "Bowel and Bladder Training." Trainex Corporation.
5. "Infection Control Series II: Program 1--Procedural Precautions: Urinary Catheter Care." Concept Media.

6. "Urethral Catheterization: An Aseptic Procedure." Kendall, Hospital Products Division, 309 West Jackson Blvd., Chicago, Illinois 60606.

B. Slides--"Abbott Foley Catheterization - Top Vented Line." Professional Hospital Representative, Abbott Laboratories, Fort Smith, Arkansas 72901.

URINARY CATHETERIZATION
UNIT IV

INFORMATION SHEET

I. Terms and definitions

   A. Catheter--Tube for removing or injecting fluids

   B. Catheterization--Insertion of a catheter through the urethra into the urinary bladder

   C. Urinary retention--Inability to empty the bladder

   D. Urinary suppression--Inability of the kidneys to secrete urine

   E. Residual--Urine retained in the bladder after voiding

   (NOTE: Normal residual is one to three cc.)

   F. Indwelling catheter--Catheter which is left in the bladder to establish constant drainage; retention catheter

   G. Foley--Double-lumen or triple-lumen catheter with an inflatable balloon near the tip

   H. Distended--Enlarged from internal pressure

   I. Intermittent--Occurring at intervals

   J. Irrigation--Washing of a body cavity with water or other fluid

   K. Urethral meatus--External opening of the urethra

   L. Culture--Growth of microorganisms in a special substance in the laboratory

   M. Sensitivity--Laboratory test to determine which medication destroys or weakens a cultured microorganism

II. Nursing measures to induce urination

   A. Placing patient in normal position for voiding unless contraindicated

      1. Sitting position for female

      2. Standing position for male

INFORMATION SHEET

- B. Providing privacy while attempting to void
- C. Assistance to walk to toilet if permitted
- D. Allowing water to run within the patient's hearing
- E. Giving warm drinks
- F. Pouring warm water over the perineum

  (NOTE: This procedure should not be used if a specimen is needed. When keeping an accurate output, measure the warm water before using it.)
- G. Placing patient's hands and/or feet in warm water
- H. Maintaining adequate fluid intake

III. Purposes of catheterization

- A. Relieve urinary retention
- B. Empty bladder prior to surgery, delivery, or examination
- C. Determine urine residual
- D. Obtain a sterile specimen for culture and sensitivity

IV. Materials used to make catheters

- A. Latex, usually disposable
- B. Rubber
- C. Glass
- D. Metal
- E. Woven silk, rubber-coated
- F. Silicone, usually disposable

  (NOTE: Silicone catheters are being used more often than other types. They cause less irritation and encrustation and require less frequent changing.)

INFORMATION SHEET

V. Sizes to use

(NOTE: Catheters are measured by the French scale according to the diameter of the lumen. The size of the catheter divided by three equals the diameter of the lumen in millimeters. For example, a size 18 catheter has a lumen which is six millimeters in diameter, $18 \div 3 = 6$.)

A. Children--8 to 10

B. Female--14 to 16

C. Male--18 to 20

VI. Types of catheters

A. Straight--With tapered or rounded tip and openings at or near the tip (Transparency 1)

B. Coudé--With tip bent in one place (Transparency 2)

(NOTE: Coudé is a French word meaning elbow.)

C. Olive tip--Blunt-shaped tip, either straight or coudé (Transparency 2)

D. Indwelling--With projections or an inflatable balloon near the tip (Transparency 3)

(NOTE: The Foley is the most effective type of retention catheter. When the balloon is inflated, it is larger than the opening to the urethra and holds the catheter in place.)

VII. Reasons for an indwelling catheter

A. Gradual drainage of an overdistended bladder

B. Intermittent bladder drainage and/or irrigation

C. Continual bladder drainage

D. Keeping accurate output record

E. Relief of tension following surgery on or near the bladder

F. Keeping incontinent patient dry

(NOTE: This should be done only after other measures have failed.)

INFORMATION SHEET

VIII. Nursing principles	Nursing responsibilities
A. Safety	
1. Bladder is a sterile cavity 2. External urethra can never be completely free of microorganisms 3. Incidence of infection is increased by a. Repeated catheterization b. Poor technique c. Lowered resistance d. Trauma to urethra or bladder	1. Check physician's order before beginning procedure 2. Catheterize only when necessary 3. Wash hands before procedure 4. Cleanse perineal area, particularly around the meatus 5. Good positioning and adequate lighting aid in locating meatus 6. Provide for and maintain sterility throughout procedure 7. Lubricate catheter; avoid force
B. Comfort	
1. Maintaining or increasing patient comfort and well-being is the basic principle underlying all procedures 2. Tension is increased by chilling or embarrassment 3. Tension interferes with insertion of catheter 4. Dorsal recumbent and lithotomy are the most used positions 5. Sims' or lateral position may be advantageous for female patient 6. Lubrication reduces friction 7. Assured attitude of nurse helps patient accept an uncomfortable procedure	1. Explain procedure 2. Drape properly to maintain warmth and avoid exposure 3. Having patient breathe through mouth aids relaxation 4. Catheterization by nurse of opposite sex will be more easily accepted if nurse maintains a matter-of-fact and assured attitude 5. Lubricate catheter with water-soluble lubricant or prescribed solution

INFORMATION SHEET

C. Effectiveness

1. Female urethra is 1 1/2 to 2 inches long (4 to 6 1/2 cm); male urethra is 5 1/2 to 6 1/2 inches long (14 to 16 1/2 cm) (Transparencies 4 and 5)
2. Too small catheter drains too slowly; one too large distends urethra, increases discomfort, and may traumatize
3. Withdrawing catheter and pushing it back in increases contamination
4. Gravity aids the flow of urine
5. Reaching over sterile field increases contamination
6. Gradual decompression of the distended bladder improves tone of bladder wall and decreases possibility of severe systemic reaction
7. Bladder should be completely drained unless contraindicated

1. Review procedure as necessary to maintain proficiency
2. Assemble all needed equipment before beginning procedure
3. Insert catheter only far enough to initiate flow of urine
4. Use proper-sized catheter
5. When urine flow stops, withdraw catheter slowly to make certain bladder is empty; avoid pushing catheter back in
6. Position patient so bladder is level to or higher than urethra to permit downward flow
7. Provide adequate space within easy reach for sterile equipment
8. Seek help with procedure if needed
9. Usually no more than 750 cc should be withdrawn at one time
10. Following procedure, record and report observations accurately

D. Economy

1. Selection of correct equipment minimizes cost to patient
2. Proper preparation and technique aids in economy of movement and material

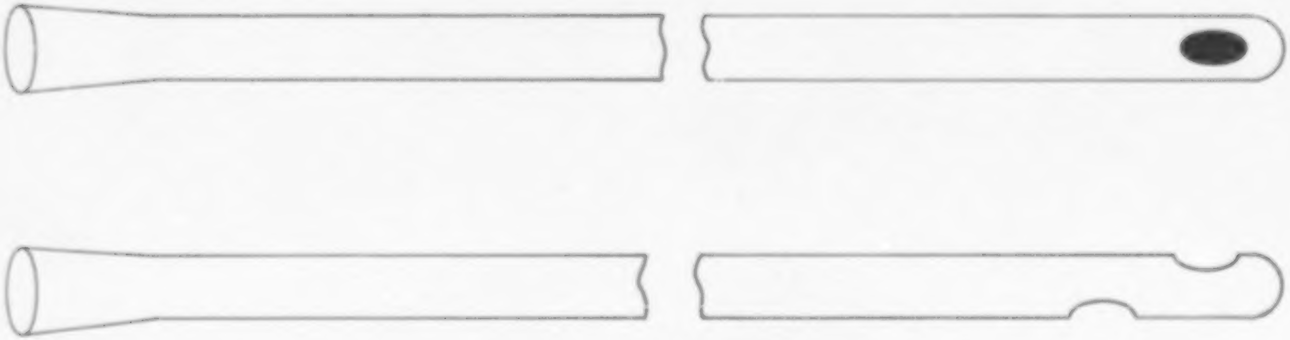
1. Check patient before preparing equipment to be certain catheterization is required
2. Position equipment conveniently and safely

INFORMATION SHEET

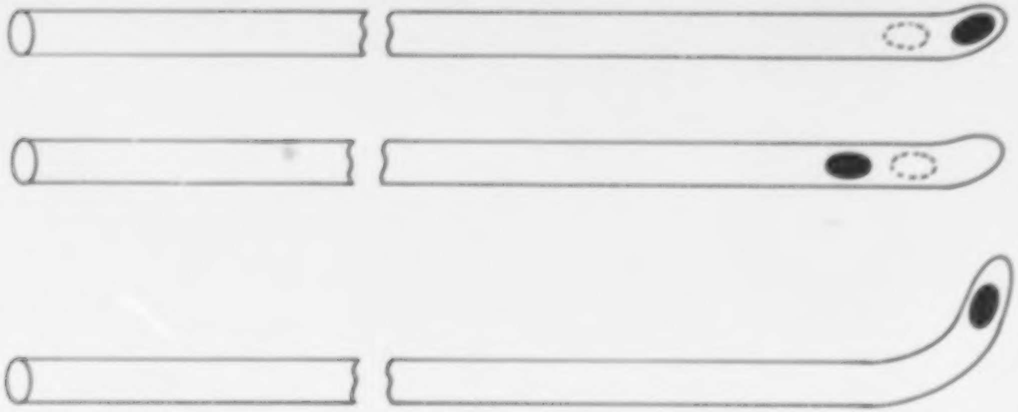
E. Neatness

1. Genital area must be clean and dry prior to procedure to prevent infection	1. Provide an orderly environment by cleaning patient and changing linens as necessary 2. Position and drape patient properly
2. A clean and orderly environment contributes to aseptic technique	3. Clean and/or dispose of equipment properly 4. Straighten unit and provide for patient's comfort following procedure

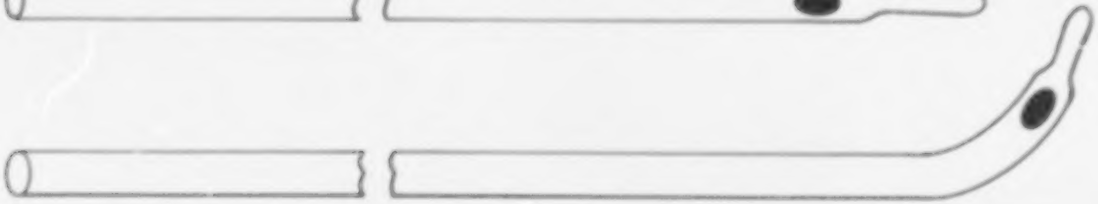
Straight Catheters



Coude' and Olive Tip Catheters

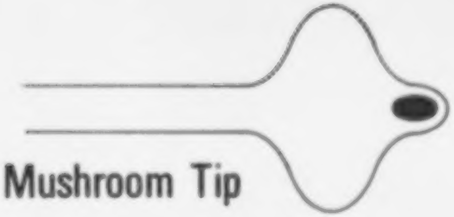


Coude'

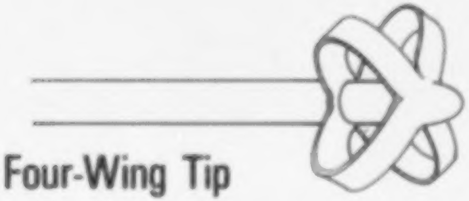


Olive Tip

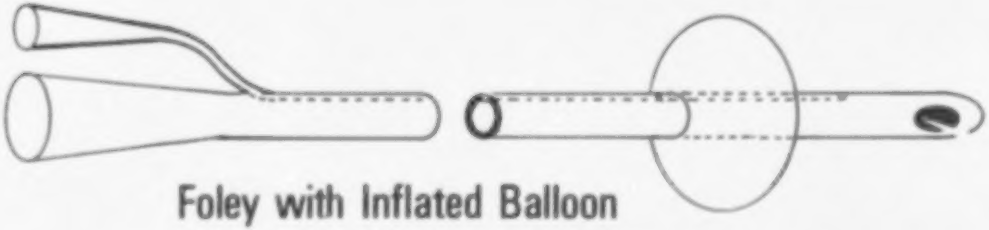
Indwelling Catheters



Mushroom Tip

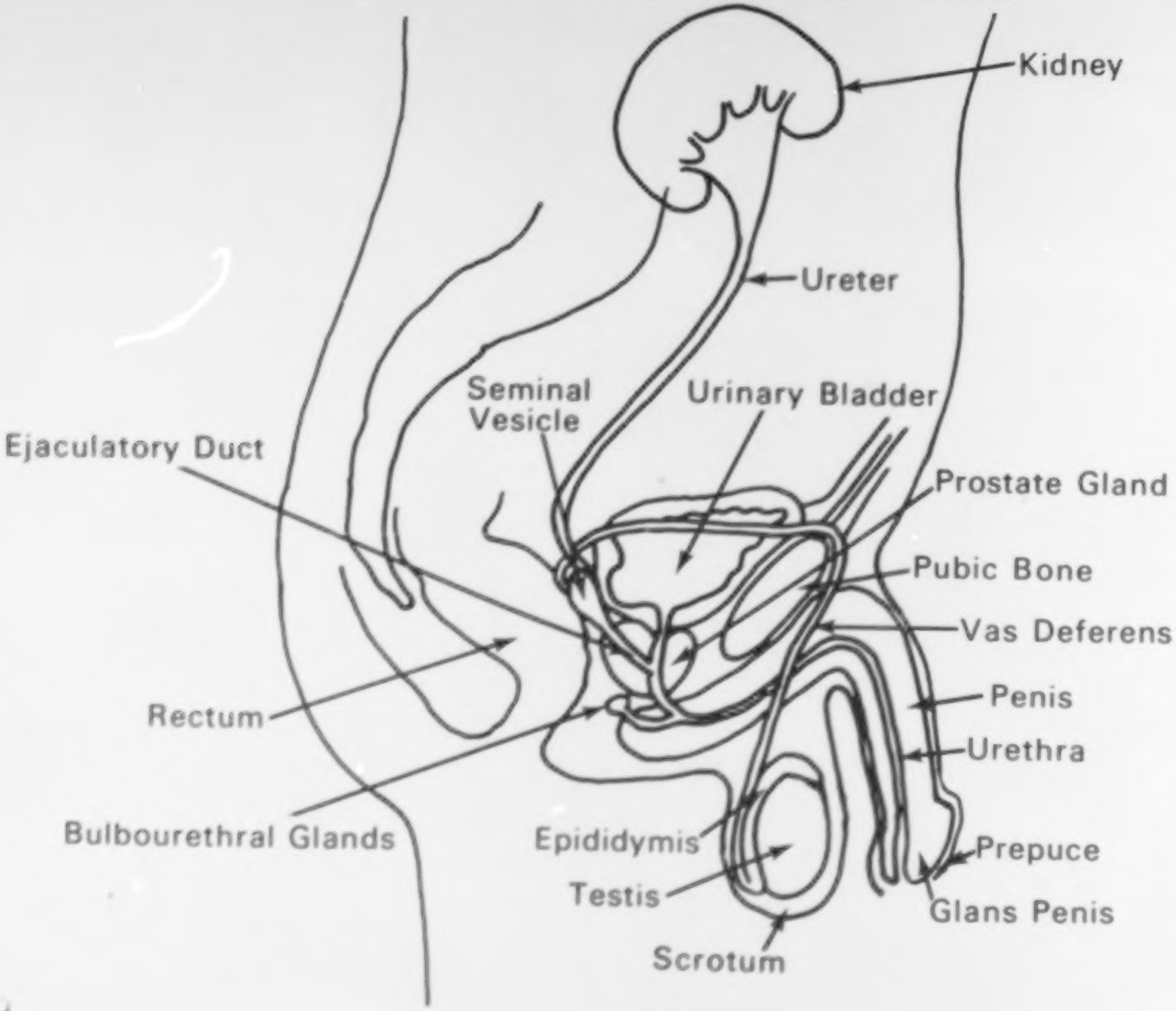


Four-Wing Tip

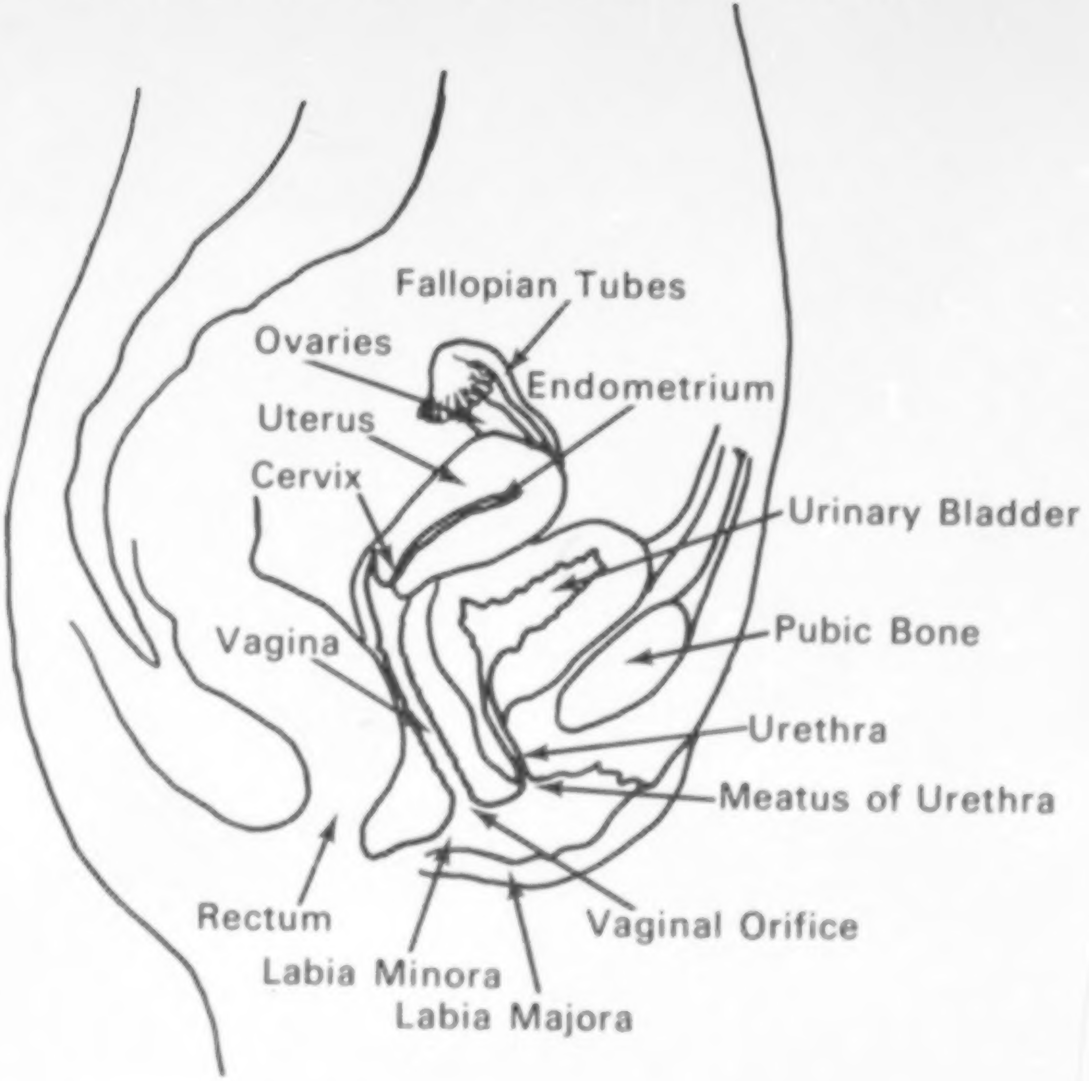


Foley with Inflated Balloon

Cross Section of a Male Pelvis


Kidney
Ureter
Seminal Vesicle
Urinary Bladder
Ejaculatory Duct
Prostate Gland
Pubic Bone
Vas Deferens
Rectum
Penis
Urethra
Bulbourethral Glands
Epididymis
Prepuce
Testis
Glans Penis
Scrotum

Cross Section of a Female Pelvis


Fallopian Tubes
Ovaries
Endometrium
Uterus
Cervix
Urinary Bladder
Pubic Bone
Vagina
Urethra
Meatus of Urethra
Rectum
Vaginal Orifice
Labia Minora
Labia Majora

URINARY CATHETERIZATION
UNIT IV

JOB SHEET #1a--CATHETERIZE A FEMALE PATIENT

I. Equipment

A. Nonsterile

1. Bed protector
2. Bath blanket or drape
3. Washcloth and towel
4. Soap and water
5. Proper lighting

B. Sterile--Catheterization set which usually includes

1. Drapes
2. Receptacle for urine
3. Catheter, size 14 Fr.
4. Cotton balls
5. Antiseptic solution
6. Forceps
7. Lubricant
8. Specimen bottle with cap and label
9. Gloves

(NOTE: When using a commercially prepared catheterization set, read the manufacturer's instructions.)

II. Procedure

A. Check the physician's order

B. Identify the patient and explain the procedure

C. Check time the patient last voided

JOB SHEET #1a

D. Wash hands

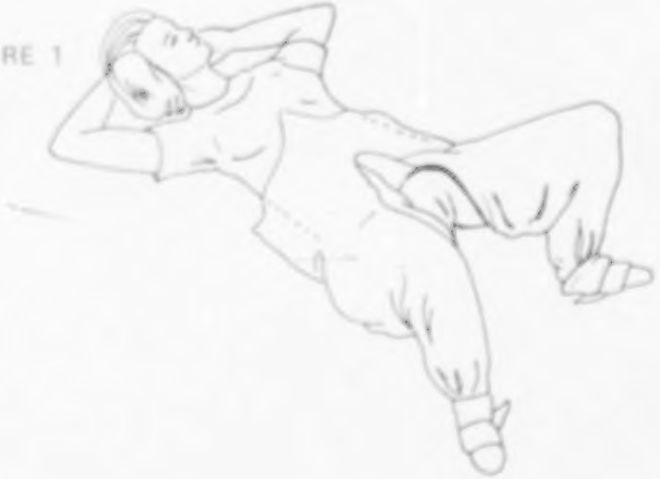
E. Assemble equipment

F. Take equipment to the patient's unit

G. Prepare the patient

  1. Provide privacy
  2. Replace top covers with bath blanket or drape
  3. Place patient in supine position
  4. Place bed protector under patient's hips
  5. Drape to expose perineal area (Figure 1)

FIGURE 1



  6. Wash perineal area with soap and water; rinse well and dry

H. Adjust lighting

I. Wash hands

J. Place equipment in convenient place

K. Open set and proceed according to manufacturer's instructions

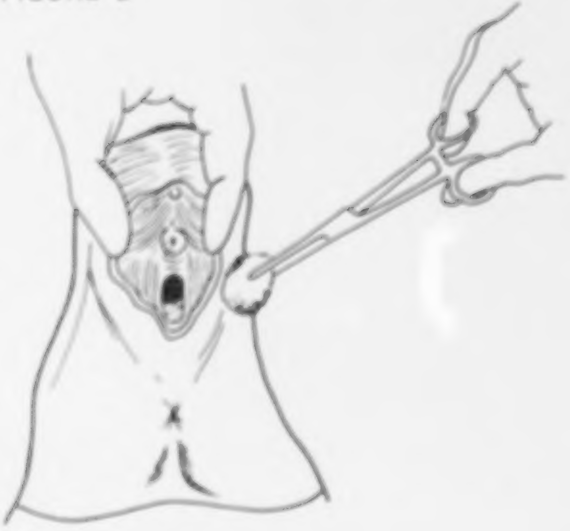
JOB SHEET #1a

L. Prepare for catheterization

1. Separate labia with thumb and forefinger of one hand to expose the urinary meatus

2. Hold saturated cotton balls with forceps, using each cotton ball for one downward stroke (Figure 2)

FIGURE 2



3. Use cotton balls saturated with antiseptic solution to cleanse from above the clitoris downward to the vagina as follows:

   a. Far side of labia

   b. Near side of labia

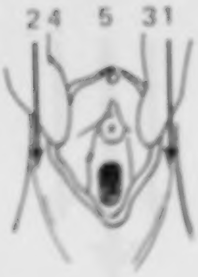
   c. Down the center over the meatus

4. Use cotton ball saturated with water to rinse in same sequence as above

JOB SHEET #1a

5. Maintain separation of the labia until the catheter is in place (Figure 3)

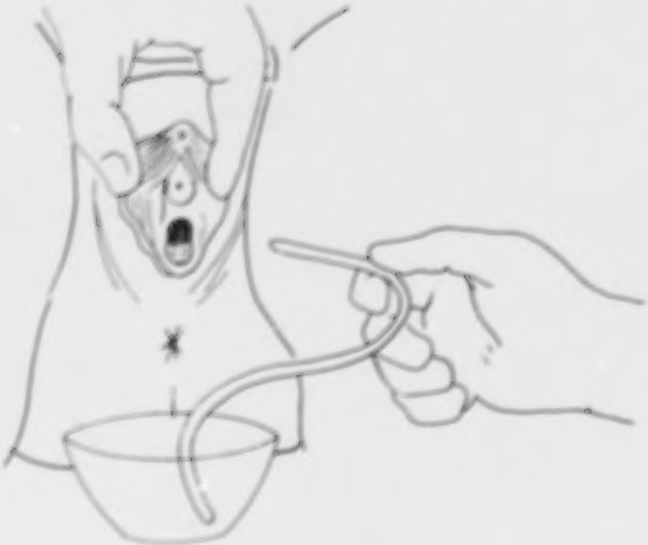
FIGURE 3



M. Hold catheter with thumb and index finger about three inches from the tip

N. Lubricate about two inches of the tip; place the other end in the collecting basin (Figure 4)

FIGURE 4



JOB SHEET #1a

O. Gently insert the catheter about two or three inches until the urine begins to flow

P. Release the labia and hold the catheter in place

(NOTE: Obtain sterile specimen if needed.)

Q. Withdraw catheter about one-half inch when flow stops to be sure bladder is empty

R. Pinch off catheter with one hand; withdraw smoothly with the other hand

S. Dry the vulva with the remaining dry cotton balls

T. Complete care of the patient

   1. Remove drape under perineum
   2. Remove bath blanket and replace top covers
   3. Provide for patient's comfort

U. Remove and care for equipment as required

   1 Discard disposable equipment
   2. Clean reusable equipment
   3. Return to proper place

V. Wash hands

W. Label urine specimen and send to laboratory

X. Report and record treatment including

   1. Time
   2. Procedure performed
   3. Amount and appearance of urine

URINARY CATHETERIZATION
UNIT IV

JOB SHEET #1b–CATHETERIZE A MALE PATIENT

I. Equipment

  A. Nonsterile

    1. Bed protector
    2. Bath blanket or drape
    3. Proper lighting
    4. Soap and water
    5. Towel and washcloth

  B. Sterile–Catheterization set which usually includes

    1. Drapes
    2. Receptacle for urine
    3. Catheter, size 18 Fr.
    4. Cotton balls
    5. Lubricant
    6. Forceps
    7. Antiseptic solution
    8. Specimen bottle with cap and label
    9. Gloves

II. Procedure

  A. Check the physician's order

  B. Identify the patient and explain the procedure

  C. Check time the patient last voided

  D. Wash hands

  E. Assemble equipment

JOB SHEET #1b

F. Take equipment to the patient's unit

G. Prepare the patient

1. Provide privacy
2. Replace top covers with bath blanket or drape
3. Place patient in supine position
4. Wash external genitalia with soap and water; rinse well and dry
5. Place bed protector under patient's hips
6. Drape patient to expose the penis

   (NOTE: This can be done by using a special drape prepared for this purpose or by pushing the bath blanket in from one side to expose the penis.)

H. Adjust lighting

I. Wash hands

J. Place equipment in convenient place

K. Open set and proceed according to manufacturer's instructions

L. Prepare for catheterization

1. Grasp the penis with one hand; pull back the foreskin on the penis and hold it back
2. Avoid touching the patient with the other hand as you complete the following steps
3. Use a cotton ball saturated with antiseptic solution to clean the glans of the penis, using a circular motion and starting at the tip and gradually working back
4. Discard cotton ball and repeat the procedure twice
5. Use a cotton ball saturated with water to rinse glans of penis
6. Discard cotton ball and repeat procedure
7. Continue holding the penis with one hand
8. Place the sterile drape around the penile area with the other hand

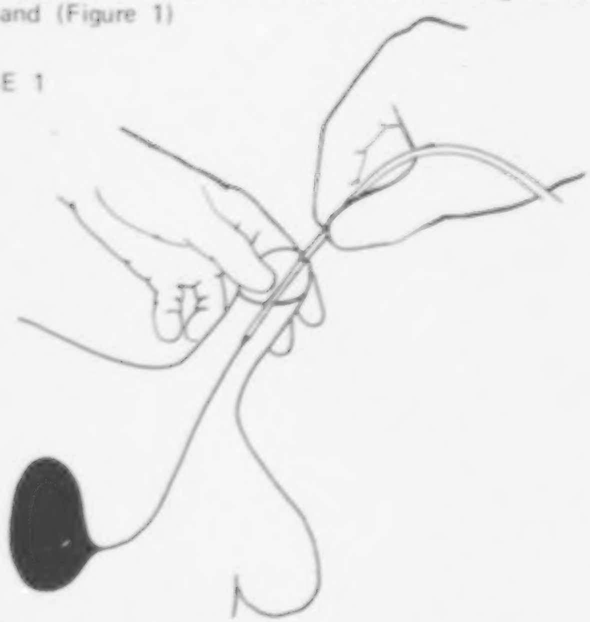
JOB SHEET #1b

M. Pick up the catheter with forceps about four inches from the tip

N. Lubricate the tip of the catheter

O. Hold the penis erect with one hand while inserting the catheter with the other hand (Figure 1)

FIGURE 1



P. Insert the catheter, using gentle but steady pressure

(NOTE: A slight resistance may be felt as the prostate gland and the bladder sphincter muscle are reached, but gentle pressure should be sufficient to push the catheter past. If you cannot insert the catheter with gentle pressure, stop and ask the physician or charge nurse for assistance.)

Q. Insert the catheter, usually about seven or eight inches, until urine begins to flow

R. Loosen grasp on the penis and allow the urine to flow into the collecting basin

(NOTE: Save sterile urine specimen if one is ordered.)

S. Remove the catheter with one gentle pull when the urine ceases to flow

T. Pull the foreskin back over the tip of the penis

(NOTE: If the foreskin remains behind the tip of the penis, it will cut off the blood supply and the penis will swell. If this swelling is not observed and relieved, gangrene of the penis may occur.)

JOB SHEET #1b

U. Complete the care of the patient

  1. Remove bed protector and bath blanket
  2. Replace top covers
  3. Provide for patient's comfort

V. Remove and care for equipment as required

  1. Discard disposable equipment
  2. Clean reusable equipment
  3. Return to proper place

W. Wash hands

X. Report and record procedure including

  1. Time
  2. Procedure performed
  3. Amount and appearance of urine

URINARY CATHETERIZATION
UNIT IV

TEST

1. Match the terms on the right to the correct definition.

______a. Laboratory test to determine which medication destroys or weakens a cultured microorganism

______b. Growth of microorganisms in a special substance in the laboratory

______c. External opening of the urethra

______d. Washing of a body cavity with water or other fluid

______e. Occurring at intervals

______f. Enlarged from internal pressure

______g. Double-lumen or triple-lumen catheter with an inflatable balloon near the tip

______h. Catheter which is left in the bladder to establish constant drainage

______i. Urine retained in the bladder after voiding

______j. Inability to empty the bladder

______k. Insertion of a catheter through the urethra into the urinary bladder

______l. Tube for removing or injecting fluids

______m. Inability of the kidneys to secrete urine

1. Urethral meatus
2. Intermittent
3. Sensitivity
4. Foley
5. Urinary retention
6. Irrigation
7. Culture
8. Indwelling catheter
9. Catheter
10. Distended
11. Residual
12. Catheterization
13. Urinary suppression

2. List six nursing measures which may induce urination.

a.

b.

c.

d.

e.

f.

3. List four purposes of catheterization.

a.

b.

c.

d.

4. List the materials used in making catheters.

a.

b.

c.

d.

e.

f.

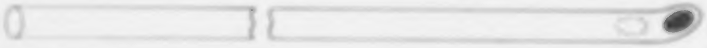
5. List sizes of catheters to use.

a. Female–

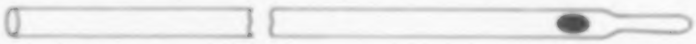
b. Male–

c. Children–

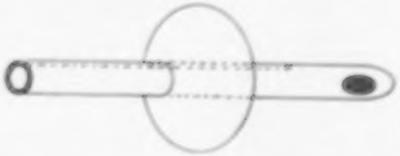
6. Identify the types of catheters illustrated below and on the following page.



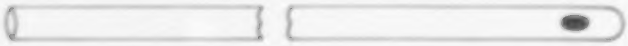
a. ______________________



b. ______________________



c. ______________________



d. ______________________

7. List four reasons for an indwelling catheter.

a.

b.

c.

d.

8. Discuss nursing principles and responsibilities of catheterization pertaining to safety, comfort, effectiveness, economy, and neatness.

Nursing principles	Nursing responsibilities

a. Safety

b. Comfort

c. Effectiveness

d. Economy

e. Neatness

9. Demonstrate the ability to catheterize a patient.

(NOTE: If this has not been accomplished prior to the test, ask the instructor when the above activity should be completed.)

URINARY CATHETERIZATION
UNIT IV

ANSWERS TO TEST

1. a. 3
   b. 7
   c. 1
   d. 6
   e. 2
   f. 10
   g. 4
   h. 8
   i. 11
   j. 5
   k. 12
   l. 9
   m. 13

2. Any six of the following:
   a. Placing patient in normal position for voiding unless contraindicated
      1) Sitting position for female
      2) Standing position for male
   b. Providing privacy while attempting to void
   c. Assistance to walk to toilet if permitted
   d. Allowing water to run within the patient's hearing
   e. Giving warm drinks
   f. Pouring warm water over the perineum
   g. Placing patient's hands and/or feet in warm water
   h. Maintaining adequate fluid intake

3. a. Relieve urinary retention
   b. Empty bladder prior to surgery, delivery, or examination
   c. Determine urine residual
   d. Obtain a sterile specimen for culture and sensitivity

4. a. Latex, usually disposable
   b. Rubber
   c. Glass
   d. Metal

e. Woven silk, rubber-coated

f. Silicone, usually disposable

5. a. Female–14 to 16

   b. Male–18 to 20

   c. Children–8 to 10

6. a. Coudé

   b. Olive tip

   c. Indwelling or Foley

   d. Straight

7. Any four of the following:

   a. Gradual drainage of an overdistended bladder

   b. Intermittent bladder drainage and/or irrigation

   c. Continual bladder drainage

   d. Keeping accurate output record

   e. Relief of tension following surgery on or near the bladder

   f. Keeping incontinent patient dry

8. Discussion should include:

   a. Safety

      1) Bladder is a sterile cavity

      2) External urethra can never be completely free of microorganisms

      3) Incidence of infection is increased by

         a) Repeated catheterization

         b) Poor technique

         c) Lowered resistance

         d) Trauma to urethra or bladder

      1) Check physician's order before beginning procedure

      2) Catheterize only when necessary

      3) Wash hands before procedure

      4) Cleanse perineal area, particularly around the meatus

      5) Good positioning and adequate lighting aid in locating meatus

      6) Provide for and maintain sterility throughout procedure

      7) Lubricate catheter; avoid force

b. Comfort

1) Maintaining or increasing patient comfort and well-being is the basic principle underlying all procedures

2) Tension is increased by chilling or embarrassment

3) Tension interferes with insertion of catheter

4) Dorsal recumbent and lithotomy are the most used positions

5) Sims' or lateral position may be advantageous for female patient

6) Lubrication reduces friction

7) Assured attitude of nurse helps patient accept an uncomfortable procedure

1) Explain procedure

2) Drape properly to maintain warmth and avoid exposure

3) Having patient breathe through mouth aids relaxation

4) Catheterization by nurse of opposite sex will be more easily accepted if nurse maintains a matter-of-fact and assured attitude

5) Lubricate catheter with water-soluble lubricant or prescribed solution

c. Effectiveness

1) Female urethra is 1 1/2 to 2 inches long (4 to 6 1/2 cm); male urethra is 5 1/2 to 6 1/2 inches long (14 to 16 1/2 cm)

2) Too small catheter drains too slowly; one too large distends urethra, increases discomfort, and may traumatize

3) Withdrawing catheter and pushing it back in increases contamination

4) Gravity aids the flow of urine

5) Reaching over sterile field increases contamination

6) Gradual decompression of the distended bladder improves tone of the bladder wall and decreases possibility of severe systemic reaction

7) Bladder should be completely drained unless contraindicated

1) Review procedure as necessary to maintain proficiency

2) Assemble all needed equipment before beginning procedure

3) Insert catheter only far enough to initiate flow of urine

4) Use proper-sized catheter

5) When urine flow stops, withdraw catheter slowly to make certain bladder is empty; avoid pushing catheter back in

6) Position patient so bladder is level to or higher than urethra to permit downward flow

7) Provide adequate space within easy reach for sterile equipment

8) Seek help with procedure if needed

9) Usually no more than 750 cc should be withdrawn at one time

10) Following procedure, record and report observations accurately

d. Economy	
1) Selection of correct equipment minimizes cost to patient	1) Check patient before preparing equipment to be certain catheterization is required
2) Proper preparation and technique aids in economy of movement and material	2) Position equipment conveniently and safely
e. Neatness	
1) Genital area must be clean and dry prior to procedure to prevent infection	1) Provide an orderly environment by cleaning patient and changing linens as necessary
2) A clean and orderly environment contributes to aseptic technique	2) Position and drape patient properly
	3) Clean and/or dispose of equipment properly
	4) Straighten unit and provide for patient's comfort following procedure

9. Performance skills will be evaluated to the satisfaction of the instructor.

THE INDWELLING CATHETER
UNIT V

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to differentiate between systems of drainage and list advantages of natural irrigation, purposes of irrigation, nursing responsibilities in caring for an indwelling catheter, and safety precautions to observe in manual irrigation. The student should be able to describe obtaining a urine specimen fron an indwelling catheter and nursing responsibilities in removing a catheter. The student will be able to demonstrate the catheterization procedure. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with the indwelling catheter to the correct definitions.
2. List two advantages of natural irrigation.
3. Differentiate between the closed and open systems of drainage.
4. List ten nursing responsibilities in caring for a patient with an indwelling catheter.
5. List three purposes of irrigation.
6. Describe two types of irrigations.
7. List four safety precautions for manual irrigations.
8. Describe the methods for obtaining a urine specimen from an open and a closed system of indwelling catheter.
9. Describe nursing responsibilities in the removal of an indwelling catheter.
10. Demonstrate the ability to:
    a. Insert an indwelling catheter.
    b. Irrigate an indwelling catheter manually.
    c. Collect a urine specimen from an indwelling catheter.
    d. Prepare and monitor a closed drainage system with irrigation.
    e. Remove an indwelling catheter.

THE INDWELLING CATHETER
UNIT V

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information and job sheets.

  C. Discuss terminal and specific objectives.

  D. Discuss information sheet.

  E. Demonstrate and discuss procedures outlined on the job sheets.

  F. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Demonstrate the ability to accomplish procedures outlined on the job sheets.

  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Transparencies

    1. TM 1--Indwelling Catheter

    2. TM 2--Indwelling Catheter with Drainage Set

    3. TM 3--Some Types of Irrigating Syringes

    4. TM 4--Closed Irrigating System

D. Job sheets

1. Job Sheet #1--Insert an Indwelling Catheter
2. Job Sheet #2--Irrigate an Indwelling Catheter Manually
3. Job Sheet #3--Collect a Urine Specimen from an Indwelling Catheter
4. Job Sheet #4--Prepare and Monitor a Closed Drainage System with Irrigation
5. Job Sheet #5--Remove an Indwelling Catheter

E. Test

F. Answers to test

II. References:

A. Dison, Norma. *An Atlas of Nursing Techniques.* St. Louis, Missouri: The C. V. Mosby Company, 1975.

B. Fuerst, Elinor V. et al. *Fundamentals of Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1974.

C. Johnston, Dorothy F. *Total Patient Care.* St. Louis, Missouri: The C. V. Mosby Company, 1972.

D. Rapier, Dorothy K. et al. *Practical Nursing.* St. Louis, Missouri: The C. V. Mosby Company, 1970.

E. Sutton, Audrey L. *Bedside Nursing Techniques in Medicine and Surgery.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

F. Garner, Julia S. "Urinary Catheter Care." *Nursing '74,* February, 1974.

III. Filmstrips:

A. "Urinary Care." Trainex Corporation.

B. "Urinary Catheterization: Male and Female." Trainex Corporation.

THE INDWELLING CATHETER
UNIT V

INFORMATION SHEET

I. Terms and definitions

   A. Catheter--Tube for removing or injecting fluids

   B. Indwelling catheter--Catheter which is left in the bladder to maintain constant drainage

   C. Irrigation--Washing of a body cavity with water or other fluid

   D. Natural irrigation--Washing out the urinary system by maintaining or increasing kidney function

   E. Manual irrigation--Washing out the catheter and/or bladder using a sterile syringe

   F. Drainage system--Tubing and accessory equipment necessary for emptying the bladder with an indwelling catheter

   G. Tidal drainage--Apparatus used to alternately fill the bladder to a predetermined extent and then empty it by a combination of siphonage and gravity flow

   H. Exudate--Material, such as fluid, cells, or cellular debris, which has escaped from blood vessels and has been deposited in tissues or on tissue surfaces

   I. Bacteriostatic--Hindering or arresting the growth of bacteria

   J. pH--Hydrogen ion concentration of a solution; the degree to which a solution is acidic or basic

   K. Siphon--Tube bent at an angle to form two unequal lengths; used for removing liquids at atmospheric pressure

II. Advantages of natural irrigation

   A. Continuous discharge of urine aids in cleaning the urinary tract of waste products including microorganisms

   B. Manual irrigation may introduce microorganisms thereby increasing the incidence of urinary infections

INFORMATION SHEET

III. Types of drainage systems

- A. Closed
  1. Provides continuous sterile passageway from the bladder to the drainage bag which is never disconnected at any junction
  2. Permits patient to sit in a chair or to ambulate without disconnecting the urine receptacle
  3. Decreases the chance of infection
  4. Allows urine receptacle to be emptied through a tube or plug at lowest part
- B. Open
  1. Allows catheter, collection tubing, or urine receptacle to be disconnected at times
  2. May be disconnected for irrigation, ambulation, or emptying collected urine
  3. Requires protection of the disconnected ends of the catheter and tubing by one of these methods
     - a. Covering the ends with sterile gauze squares securely fastened with tape or rubber band
     - b. Using sterile catheter plug and tubing cap
     - c. Immersing the end of the tubing in antiseptic solution and placing the end of the catheter in another sterile receptacle

IV. Nursing responsibilities in caring for patient with indwelling catheter (Transparencies 1 and 2)

(NOTE: Catheter care is primarily a nursing responsibility. Proper care is important in preventing urinary tract infections.)

- A. Wash hands thoroughly before and after catheter and/or perineal care
- B. Instruct the patient on how the system functions and how he can assist, including handwashing technique

INFORMATION SHEET

C. Clean meatus and surrounding area with a bacteriostatic solution

(NOTE: On male patients the area should be cleansed at least once daily; for female patients the perineal area should be cleansed at least twice daily. Organisms allowed to accumulate in the region of the meatus can ascend the catheter and cause infection.)

D. Maintain the closed system when one is being used

E. Use sterile technique when irrigating an open system

F. Encourage adequate fluid intake unless contraindicated

(NOTE: Adequate fluid intake is essential for natural irrigation and prevents an accumulation of mucus, minerals, and exudate in the bladder and around the catheter.)

G. Keep the urine container and tubing level with or below the bladder at all times to prevent backflow of urine into the bladder

H. Keep tubing free of kinks or other obstructions

(NOTE: When securing tubing to the bed to prevent excess pull on the catheter, be certain the tubing permits free flow and is not pinched off.)

I. Prevent tubing from hanging below the level of the urine receptacle

J. Empty drainage receptacle at least once every eight hours

K. Give patient apple, cranberry, or grape juice to promote acidity of the urine and reduce odor

(NOTE: Citrus juices tend to make the urine alkaline which enhances the growth of bacteria and the formation of renal stones.)

L. Observe and record the amount and characteristics of the urine

V. Purposes of irrigation

A. Keep catheter patent

B. Prevent formation of clots or aid in their removal

INFORMATION SHEET

C. Treat infection with medication

D. Change pH of urine

VI. Types of irrigations

A. Manual (Transparency 3)

1. Fluid is introduced into the bladder using a syringe
2. Fluid is returned by gravity flow
3. Sterile equipment and sterile technique must be used
4. Risk of contamination is greater than with other irrigating systems

B. Closed system (Transparency 4)

1. It may be used for continuous or intermittent irrigation
2. Manufacturer's instructions must be consulted because systems vary
3. System should be left intact at all times

VII. Safety precautions for manual irrigations

A. Irrigate only as ordered

B. Maintain sterility of all equipment

C. Administer solution gently to avoid damage to the mucous membrane lining

D. Inject specified amount of solution

(NOTE: For CATHETER irrigations, usually 30 ml is injected and allowed to drain. For BLADDER irrigations as much as 200 ml may be injected before draining. If the larger amount causes patient discomfort, use a smaller amount. Repeat injections until returning fluid is clear or as specified.)

E. Permit solution to return by gravity flow

(NOTE: Aspiration with a syringe can cause trauma to bladder mucosa or collapse of the bladder.)

INFORMATION SHEET

F. Avoid distending the bladder

(NOTE: If solution does not return properly, consult the charge nurse or physician for assistance.)

VIII. Obtaining urine specimen from the indwelling catheter

A. Open system

1. Cleanse catheter and tubing at area of connection
2. Disconnect catheter and drain urine into a sterile container

B. Closed system

1. Use a sterile syringe with a small gauge needle
2. Cleanse an area near the distal end of the catheter with antiseptic solution
3. Insert needle in the cleaned area and withdraw desired amount of urine
4. Remove needle from catheter

IX. Nursing responsibilities in removing an indwelling catheter

A. Remove only upon the order of physician

B. Deflate balloon completely before removing catheter

C. Measure urine in drainage receptacle; record

D. Observe patient for retention or dribbling

E. Keep accurate record of intake and output

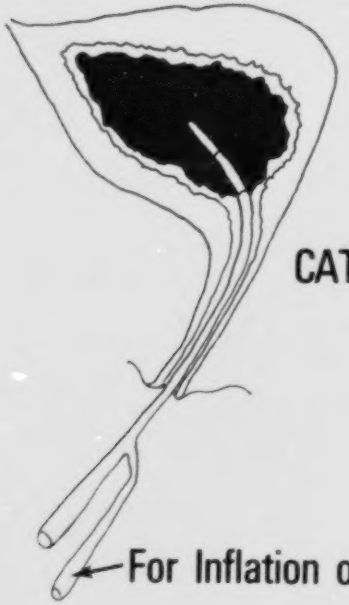
F. Observe and record appearance of urine

(NOTE: Accurate record of intake, output, and appearance of urine may be necessary for several days after removal of catheter, particularly if the patient has had urological surgery.)

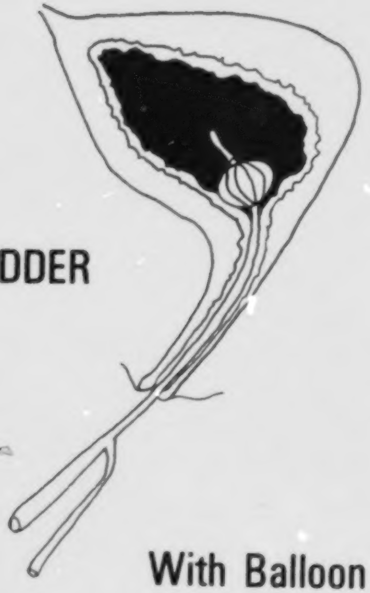
G. Observe and report any signs of urinary infection including

1. Temperature elevation
2. Chilling
3. Abnormal appearance of urine

Indwelling Catheter

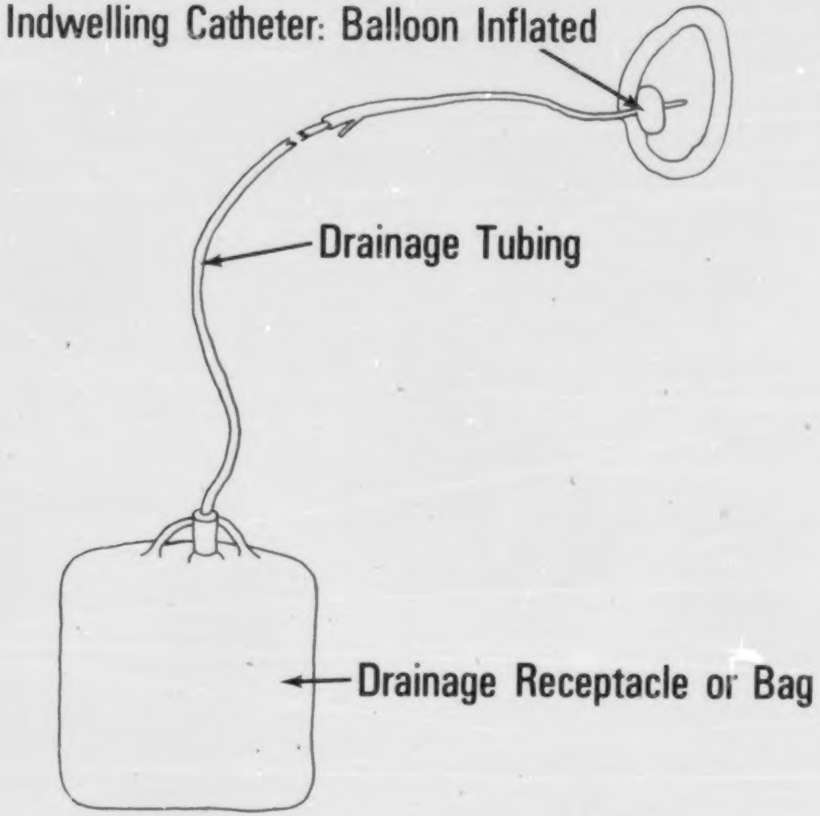

For Inflation of Balloon

CATHETER IN BLADDER

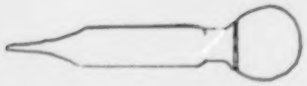


With Balloon Inflated

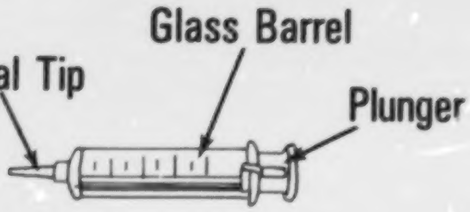
Indwelling Catheter with Drainage Set


Indwelling Catheter: Balloon Inflated
Drainage Tubing
Drainage Receptacle or Bag

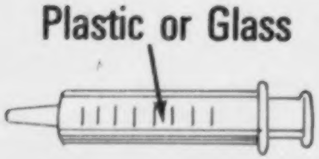
Some Types of Irrigating Syringes



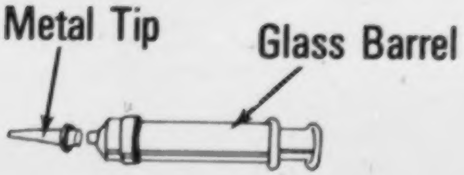
ASEPTO SYRINGE


Glass Barrel
Metal Tip
Plunger

CATHETER SYRINGE

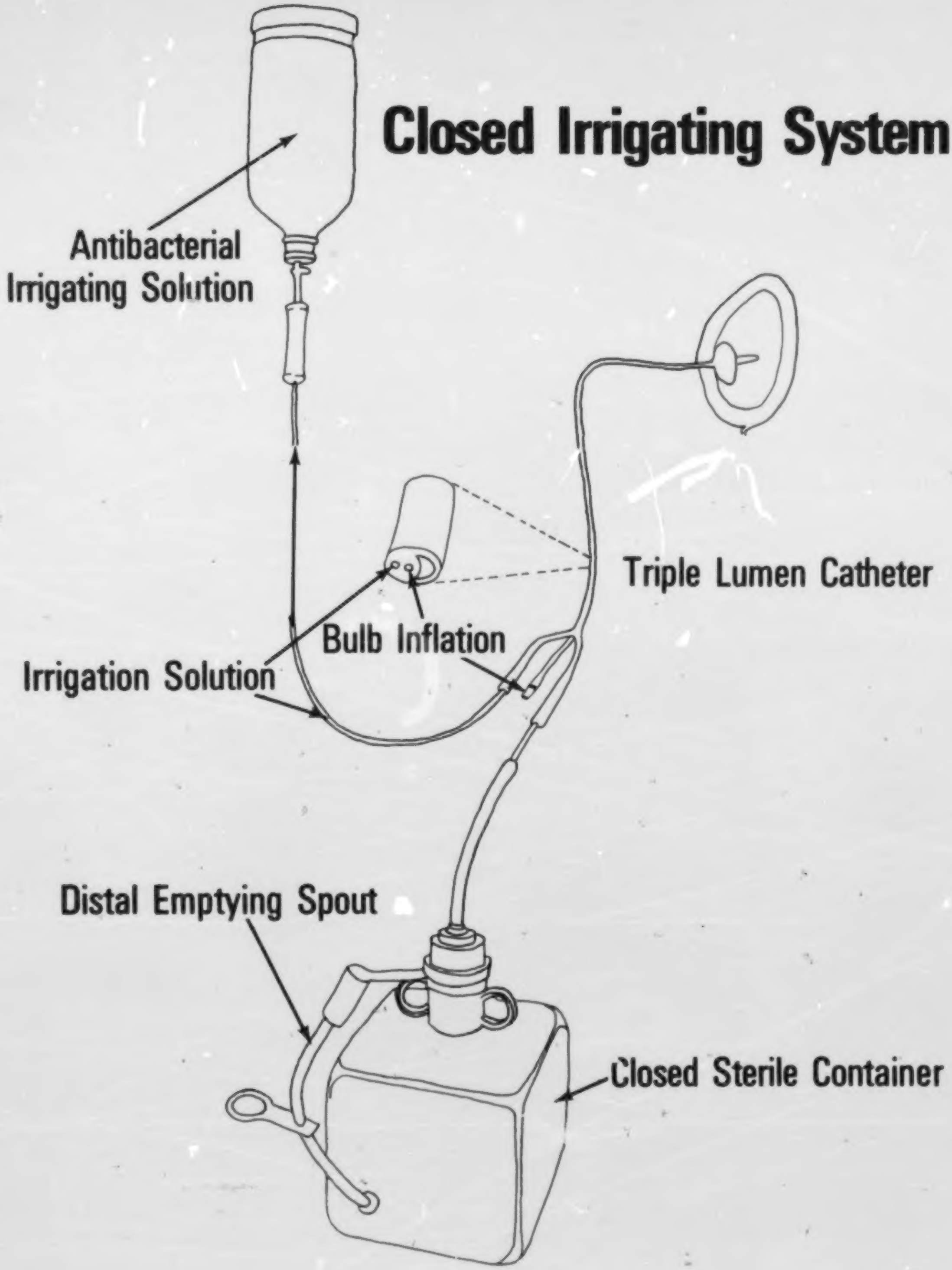

Plastic or Glass

IRRIGATING SYRINGE


Metal Tip
Glass Barrel

TOOMEY BLADDER EVACUATOR

Closed Irrigating System


Antibacterial Irrigating Solution
Triple Lumen Catheter
Bulb Inflation
Irrigation Solution
Distal Emptying Spout
Closed Sterile Container

THE INDWELLING CATHETER
UNIT V

JOB SHEET #1--INSERT AN INDWELLING CATHETER

I. Equipment

   A. Nonsterile

      1. Bed protector
      2. Bath blanket or drape
      3. Proper lighting
      4. Washcloth and towel
      5. Soap and water
      6. Tape and ties

   B. Sterile

      1. Catheterization set including

         a. Drapes
         b. Cotton balls
         c. Antiseptic solution
         d. Forceps
         e. Lubricant
         f. Specimen bottle with cap and label
         g. Gloves

      2. Syringe, 5 or 10 cc

         (NOTE: In some sets, the syringe is prefilled. Check package information to determine if sufficient solution is provided in the package.)

      3. Needle, 22- to 24-gauge, if needed

JOB SHEET #1

4. Indwelling catheter, usually 16 Fr with a 5 ml balloon

   (NOTE: There are various types of catheters with inflatable balloons. In most types, sterile solution is injected through a side tubing, using a sterile syringe with or without a needle. One type inflates when the prepositioned clamp is released on the side tubing. Consult the instructions on the package for specific information about the catheter provided.)

5. Drainage tubing and receptacle

II. Procedure

   A. Check the physician's order
   B. Identify the patient and explain the procedure
   C. Check time the patient last voided
   D. Wash hands
   E. Assemble equipment
   F. Take equipment to the patient's unit
   G. Prepare the patient
      1. Provide privacy
      2. Replace top covers with bath blanket or drape
      3. Place patient in supine position
      4. Place bed protector under the patient's buttocks
      5. Drape patient to expose urethral area
      6. Wash area with soap and water; rinse well and dry
   H. Adjust lighting
   I. Wash hands
   J. Place equipment in convenient place
   K. Open set and proceed according to manufacturers' instructions
   L. Attach distal end of catheter to tubing, if necessary

JOB SHEET #1

M. Prepare for catheterization of female patient

1. Separate labia with thumb and forefinger of one hand to expose the urinary meatus
2. Hold cotton balls with forceps, using each cotton ball for only one downward stroke
3. Cleanse from above the clitoris downward to the vagina as follows
    a. Far side of labia minora
    b. Near side of labia minora
    c. Down the center over the meatus
    d. Maintain separation of the labia until the catheter is in place
4. Hold catheter with thumb and index finger of the right hand about four inches from the tip
5. Lubricate the tip of the catheter
6. Insert the catheter gently about two to three inches until the urine begins to flow
7. Release the labia and hold the catheter in place
8. Inflate the bag with sterile solution when the urine flow ceases

    (NOTE: If the patient complains of pain when the balloon is being inflated, empty the balloon and insert the catheter farther because it may be in the urethra.)
9. Pull on the catheter slightly to be sure it is secured in the bladder

N. Prepare for catheterization of male patient

1. Expose the patient's penis
2. Grasp the penis with one hand; pull back the foreskin on the penis and hold it back
3. Avoid touching the patient with the other hand as you complete the following steps

JOB SHEET #1

4. Use a saturated cotton ball to clean the end of the penis with a circular motion, starting at the tip and gradually working outward

5. Discard cotton ball; repeat procedure as needed

6. Continue holding penis with one hand

7. Place the sterile drape around the penile area with the other hand

8. Pick up the catheter with forceps about four inches from the tip; lubricate the tip

9. Hold the penis erect with one hand while inserting the catheter with the other hand

10. Insert the catheter using gentle, steady pressure

    (NOTE: A slight resistance may be felt as the prostate gland and bladder sphincter muscle are reached, but gentle pressure should be sufficient to push the catheter past. If you cannot insert the catheter with gentle pressure, stop and get the physician or charge nurse for assistance.)

11. Loosen grasp on the penis to allow the urine to flow

12. Inflate the balloon of the catheter when the flow of urine ceases

    (NOTE: If the patient complains of pain when the balloon is being inflated, empty the balloon and insert the catheter farther because it may be in the urethra.)

13. Pull the foreskin back over the tip of the penis

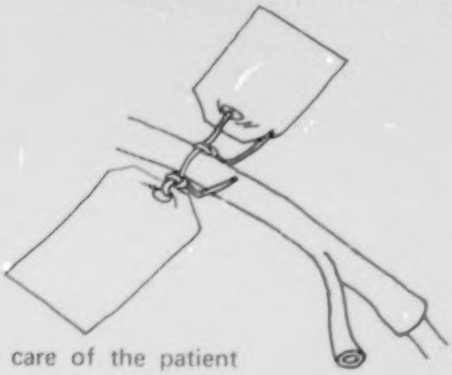
    (NOTE: If the foreskin remains behind the tip of the penis, it will cut off the blood supply and the penis will swell.)

14. Pull on the catheter slightly to be sure it is secured in the bladder

JOB SHEET #1

O. Fasten the catheter to the inside of the patient's thigh using tape or Montgomery straps; leave the catheter loose enough to allow some movement without too much tension on the urethra (Figure 1)

FIGURE 1



P. Finish the care of the patient

1. Secure the drainage tubing to the drawsheet or bottom sheet in a manner to insure drainage
2. Hang the urinary drainage bag on the railing of the bed
3. Remove bed protector and bath blanket
4. Replace top covers
5. Provide for patient's comfort

Q. Remove and care for equipment as required

1. Discard disposable equipment
2. Clean reusable equipment
3. Return to proper place

R. Wash hands

S. Report and record procedure including

1. Time
2. Procedure performed
3. Amount and appearance of urine

T. Check the patient at intervals to observe the drainage system

U. Report any unusual symptoms or complaints

THE INDWELLING CATHETER
UNIT V

JOB SHEET #2--IRRIGATE AN INDWELLING CATHETER MANUALLY

I. Equipment

  A. Nonsterile

    1. Bed protector

    2. Tray

  B. Sterile

    1. Irrigating syringe

    2. Container for solution

    3. Container for drainage

    4. Irrigating solution

    5. Cover for tubing

      (NOTE: In some institutions a protective cap is kept in antiseptic solution at the bedside; if no cap is provided, use sterile gauze squares and rubber band to cover the end of the tube.)

    6. Cotton balls

    7. Antiseptic solution

II. Procedure

  A. Check physician's order

  B. Wash hands

  C. Assemble and prepare equipment

    1. Open package of sterile equipment using aseptic technique

    2. Pour solution into container

    3. Cover setup

  D. Identify patient and explain procedure

  E. Provide privacy

JOB SHEET #2

F. Position patient

G. Wash hands

H. Place bed protector under catheter and tubing

I. Place tray conveniently; uncover it

J. Place drainage container in front of patient on bed protector

K. Wipe junction of catheter and tubing with antiseptic solution

L. Disconnect catheter from tubing

   1. Let open end of catheter rest in drainage container

   2. Cover end of tubing

   3. Secure tubing so it will not fall to the floor

M. Assemble the syringe, if necessary

N. Fill the syringe with solution

O. Attach it to the catheter and gently inject the fluid into the bladder

P. Disconnect the syringe from the catheter and permit the solution to flow into the drainage container

Q. Observe the fluid returning through the catheter

   1. If the fluid does not return, inject 30 cc more of fluid

   2. If the fluid still does not return, stop the procedure and ask for assistance from the charge nurse of physician

   3. If the fluid returns, continue the irrigation as prescribed

R. Discontinue the procedure if the patient complains of pain; notify charge nurse or physician

S. Reconnect the catheter to the drainage tube

T. Provide for the patient's comfort

U. Clean and return equipment to proper place

V. Wash hands

W. Record and report the treatment and observations

THE INDWELLING CATHETER
UNIT V

JOB SHEET #3--COLLECT A URINE SPECIMEN FROM AN INDWELLING CATHETER

I. Equipment

   A. Sterile specimen bottle

   B. Sterile syringe and small gauge needle (for closed drainage system)

   C. Cotton balls

   D. Antiseptic solution

II. Procedure for open drainage system

   A. Check physician's order

   B. Wash hands

   C. Assemble equipment

   D. Identify patient and explain procedure

   E. Provide privacy

   F. Wipe junction of catheter and tubing with antiseptic solution

   G. Separate catheter from tubing

   H. Protect end of tubing with cap or other cover

   I. Hold catheter so urine runs into specimen bottle; cover bottle

   J. Reconnect catheter and tubing

   K. Make patient comfortable

   L. Label urine specimen; send to laboratory

   M. Clean and return equipment to proper place

   N. Wash hands

   O. Record procedure

JOB SHEET #3

III. Procedure for closed drainage system

- A. Check physician's order
- B. Wash hands
- C. Assemble equipment
- D. Identify patient and explain procedure
- E. Provide privacy
- F. Cleanse area near the distal end of the catheter with antiseptic solution
- G. Insert needle into cleaned area of catheter

  (CAUTION: Do not insert the needle through the inflation channel.)
- H. Withdraw desired amount of urine; place in sterile specimen container
- I. Cover container
- J. Make patient comfortable
- K. Label urine specimen; send to laboratory
- L. Wash hands
- M. Record procedure

THE INDWELLING CATHETER
UNIT V

JOB SHEET #4-PREPARE AND MONITOR A CLOSED DRAINAGE SYSTEM WITH IRRIGATION

I. Equipment

   A. Nonsterile

      1. Standard

      2. Container of sterile irrigating solution

      3. Clamps, 2

   B. Sterile

      1. Y-tube

      2. Tubing, 2 lengths

      3. Urine receptacle

      4. Container

II. Procedure

   A. Check physician's order

   B. Wash hands

   C. Assemble equipment

   D. Identify patient and explain procedure

   E. Attach tubing to container of solution

   F. Clamp off tubing just below container

   G. Hang container on standard

   H. Open clamp and run solution through tubing into container

   I. Clamp tubing

   J. Attach tubing to one short arm of the Y-tube

   K. Attach drainage to second short arm

JOB SHEET #4

L. Attach long arm of Y-tube to catheter

M. Use second clamp just below the Y-tube on the drainage tubing

N. Irrigate catheter

1. Close clamp below Y-tube
2. Observe amount of fluid in container
3. Open clamp below container; allow specified amount of irrigating solution to run into the bladder
4. Close clamp below container
5. Open clamp below Y-tube to allow solution to run out of the bladder

O. Clean and replace equipment not needed

P. Wash hands

Q. Record treatment including

1. Time
2. Amount and kind of solution used
3. Characteristics of drainage

(NOTE: When continuous irrigation is ordered, attach a drip chamber in the tubing a little below the container of irrigating solution. Regulate the rate of drip as specified by the physician. Omit the clamp below the Y-tube while irrigating continuously.)

THE INDWELLING CATHETER
UNIT V

JOB SHEET #5--REMOVE AN INDWELLING CATHETER

I. Equipment

  A. Nonsterile

    1. Bed protector
    2. Waste receptacle
    3. Towel and washcloth
    4. Soap and water

  B. Sterile

    1. Drape
    2. Gloves
    3. Syringe
    4. Needle, 22- to 25-gauge, if needed
    5. Cotton balls
    6. Antiseptic solution

II. Procedure

  A. Check physician's order

  B. Wash hands

  C. Assemble equipment

  D. Identify patient and explain procedure

  E. Prepare patient

    1. Provide privacy
    2. Replace top covers with bath blanket or drape

JOB SHEET #5

3. Position patient
4. Place bed protector under buttocks
5. Drape to expose urethral area
6. Wash urethral area with soap and water; rinse and dry

F. Adjust lighting

G. Wash hands

H. Place equipment in convenient place

I. Remove tape from catheter

J. Put on sterile gloves

K. Insert empty syringe into end of inflation tube

L. Withdraw all the solution; lay syringe aside

(NOTE: If unable to withdraw the solution, notify the charge nurse or the physician.)

M. Cleanse meatus and surrounding area with saturated cotton balls

N. Remove the catheter slowly and gently, rotating it slightly to remove any residual urine; lay catheter aside

O. Cleanse and dry the urethral area

P. Remove gloves

Q. Provide for the patient's comfort

R. Remove and care for equipment as required

S. Wash hands

T. Report and record procedure including

1. Time
2. Procedure performed
3. Amount and appearance of urine

U. Check patient for time and amount of urinary output, dribbling, inability to urinate, or chilling

V. Report any unusual symptoms or complaints

N II - 221-B

THE INDWELLING CATHETER
UNIT V

TEST

1. Match the terms on the right to the correct definition.

_____a. Washing out the urinary system by maintaining or increasing kidney function

_____b. Tube for removing or injecting fluids

_____c. Washing out the catheter and/or bladder using a sterile syringe

_____d. Tubing and accessory equipment necessary for emptying the bladder with an indwelling catheter

_____e. Catheter which is left in the bladder to maintain constant drainage

_____f. Hydrogen ion concentration of a solution; the degree to which a solution is acidic or basic

_____g. Washing of a body cavity with water or other fluid

_____h. Apparatus used to alternately fill the bladder to a predetermined extent and then empty it by a combination of siphonage and gravity flow

_____i. Material, such as fluid, cells, or cellular debris, which has escaped from blood vessels and has been deposited in tissues or on tissue surfaces

_____j. Hindering or arresting the growth of bacteria

_____k. Tube bent at an angle to form two unequal lengths; used for removing liquids at atmospheric pressure

1. Irrigation
2. Drainage system
3. Indwelling catheter
4. Bacteriostatic
5. Catheter
6. Siphon
7. Exudate
8. Natural irrigation
9. Tidal drainage
10. pH
11. Manual irrigation

2. List two advantages of natural irrigation.

a.

b.

3. Differentiate between the closed and open systems of drainage.

4. List ten nursing responsibilities in caring for a patient with an indwelling catheter.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

   i.

   j.

5. List three purposes of irrigation.

   a.

   b.

   c.

6. Describe two types of irrigations.

   a. Manual

   b. Closed system

7. List four safety precautions for manual irrigations.

   a.

   b.

   c.

   d.

8. Describe the methods for obtaining a urine specimen from an open and a closed system of indwelling catheter.

   a. Closed

   b. Open

9. Describe nursing responsibilities in the removal of an indwelling catheter.

10. Demonstrate the ability to:

   a. Insert an indwelling catheter.

   b. Irrigate an indwelling catheter manually.

   c. Collect a urine specimen from an indwelling catheter.

   d. Prepare and monitor a closed drainage system with irrigation.

   e. Remove an indwelling catheter.

(NOTE. If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

THE INDWELLING CATHETER
UNIT V

ANSWERS TO TEST

1.
a. 8
b. 5
c. 11
d. 2
e. 3
f. 10
g. 1
h. 9
i. 7
j. 4
k. 6

2. a. Continuous discharge of urine aids in cleaning the urinary tract of waste products including microorganisms

   b. Manual irrigation may introduce microorganisms thereby increasing the incidence of urinary infections

3. a. Closed

      1) Provides continuous sterile passageway from the bladder to the drainage bag which is never disconnected at any junction

      2) Permits patient to sit in a chair or to ambulate without disconnecting the urine receptacle

      3) Decreases the chance of infection

      4) Allows urine receptacle to be emptied through a tube or plug at lowest part

   b. Open

      1) Allows catheter, collection tubing, or urine receptacle to be disconnected at times

      2) May be disconnected for irrigation, ambulation, or emptying collected urine

      3) Requires protection of the disconnected ends of the catheter and tubing by one of these methods

         a) Covering the ends with sterile gauze squares securely fastened with tape or rubber band

         b) Using sterile catheter plug and tubing cap

         c) Immersing the end of the tubing in antiseptic solution and placing the end of the catheter in another sterile receptacle

4. Any ten of the following:
   a. Wash hands thoroughly before and after catheter and/or perineal care
   b. Instruct the patient on how the system functions and how he can assist, including handwashing technique
   c. Clean meatus and surrounding area with bacteriostatic solution
   d. Maintain the closed system when one is being used
   e. Use sterile technique when irrigating an open system
   f. Encourage adequate fluid intake unless contraindicated
   g. Keep the urine container and tubing level with or below the bladder at all times to prevent backflow of urine into the bladder
   h. Keep tubing free of kinks or other obstructions
   i. Prevent tubing from hanging below the level of the urine receptacle
   j. Empty drainage receptacle at least once every eight hours
   k. Give patient apple, cranberry, or grape juice to promote acidity of urine and reduce odor
   l. Observe and record the amount and characteristics of the urine
5. Any three of the following:
   a. Keep catheter patent
   b. Prevent formation of clots or aid in their removal
   c. Treat infection with medication
   d. Change pH of urine
6. Description should include:
   a. Manual
      1) Fluid is introduced into the bladder using a syringe
      2) Fluid is returned by gravity flow
      3) Sterile equipment and sterile technique must be used
      4) Risk of contamination is greater than with other irrigating systems

b. Closed system

1) It may be used for continuous or intermittent irrigation

2) Manufacturer's instructions must be consulted because systems vary

3) System should be left intact at all times

7. Any four of the following:

a. Irrigate only as ordered

b. Maintain sterility of all equipment

c. Administer solution gently to avoid damage to the mucous membrane lining

d. Inject specified amount of solution

e. Permit solution to return by gravity flow

f. Avoid distending the bladder

8. Description should include:

a. Closed

1) Use a sterile syringe with a small gauge needle

2) Cleanse an area near the distal end of the catheter with antiseptic solution

3) Insert the needle in the cleaned area and withdraw desired amount of urine

4) Remove needle from catheter

b. Open

1) Cleanse catheter and tubing at area of connection

2) Disconnect catheter and drain urine into a sterile container

9. Description should include:

a. Remove only upon order of physician

b. Deflate balloon completely before removing catheter

c. Measure urine in drainage receptacle; record

d. Observe patient for retention or dribbling

- e. Keep accurate record of intake and output
- f. Observe and record appearance of urine
- g. Observe and report any signs of urinary infection including
    - 1) Temperature elevation
    - 2) Chilling
    - 3) Abnormal appearance of urine

10. Performance skills will be evaluated to the satisfaction of the instructor.

ISOLATION TECHNIQUE
UNIT VI

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list ways diseases are spread and how to prevent the spread of particular diseases. The student should be able to describe isolation techniques and reverse isolation and demonstrate the use of gown and mask. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with isolation technique to the correct definitions.
2. List four ways diseases are spread.
3. List three ways to prevent the spread of a disease.
4. List four purposes of isolation technique in a health facility.
5. List diseases affecting specific systems and ways they are spread.
6. Describe isolation technique for diseases affecting the specific systems.
7. List eight general principles of isolation.
8. Discuss the wearing of isolation clothing.
9. Describe reverse or protective isolation.
10. Describe double bagging.
11. Describe isolation procedures for listed articles or procedures.
12. Discuss nursing responsibilities to meet the emotional needs of the isolated patient.
13. Demonstrate the ability to put on and remove a mask and gown.

ISOLATION TECHNIQUE
UNIT VI

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and job sheets.

   C. Discuss terminal and specific objectives.

   D. Discuss information sheet.

   E. Demonstrate and discuss the procedure outlined on the job sheet.

   F. Demonstrate and discuss isolation procedures using role-playing.

   G. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Demonstrate the ability to accomplish the procedures outlined on the job sheet.

   E. Participate in role-playing isolation procedures.

   F. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Job Sheet #1--Put On and Remove Mask and Gown

   D. Test

   E. Answers to test

II. References:

A. *Nursing Procedures for the Practical Nurse.* Ohio Trade and Industrial Education Service.

B. *Practical Nursing II: Course Outline.* North Carolina State Board of Education.

C. Sutton, Audrey L. *Bedside Nursing Techniques in Medicine and Surgery.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

D. Thompson, Ella M., and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

III. Filmstrips:

A. "Isolation Technique." Trainex Corporation.

B. "Infection Control Series I: Programs 1 to 5." Concept Media.

C. "Infection Control Series II: Programs 5 to 8." Concept Media.

ISOLATION TECHNIQUE
UNIT VI

INFORMATION SHEET

I. Terms and definitions

A. Contaminated--Exposed to pathogenic organisms

(NOTE: Contaminated articles may appear clean but still be very infective after contact with a diseased person.)

B. Isolation--Separation of persons having an infection or contagious disease from others; separation of contaminated articles

C. Isolation technique--Nursing care procedures to prevent the spread of an infection or contagious disease from one person to another

D. Disinfection--Killing of pathogenic organisms by chemical or physical means; commonly used on inanimate objects

E. Tenesmus--Painful straining to empty the bowels or bladder without the evacuation of feces or urine

F. Dysentery--Inflammation of the intestine, particularly the colon, due to varied causes; characterized by abdominal pain, tenesmus, and diarrhea with blood or mucus

G. Infectious hepatitis--Acute, infectious, inflammatory disease of the liver caused by a virus; transmitted orally; may be epidemic

H. Serum hepatitis--Form of viral hepatitis transmitted by the parenteral injection of human blood or blood products contaminated with the hepatitis virus

I. Excreta--Waste material cast off by the body

J. Vesicle--Small blister filled with fluid

K. Bulla--Large blister filled with fluid

L. Impetigo--Acute, infectious, inflammatory skin disease caused by streptococci or staphylococci and characterized by vesicles and bullae which rupture and develop crusts

M. Scabies--Contagious skin disorder caused by a minute insect which burrows under the skin; causes intense itching chiefly at night

INFORMATION SHEET

N. Necrosis--Pathological death of a cell or group of cells in contact with living tissue

O. Gangrene--Necrosis of a part due to failure of blood supply, to disease, or to injury

P. Gas gangrene--Form of gangrene occurring in massive wounds; caused by anaerobic bacilli; characterized by high fever, offensive purulent discharge, and presence of gas bubbles in the tissues

Q. Concurrent disinfection--Disinfection carried on daily or as often as necessary in patient care

R. Terminal disinfection--Care of the patient's unit and belongings after the infectious period has ended or when articles are removed from the unit

S. Reverse isolation technique--Modified surgical asepsis to prevent the introduction of disease-producing organisms into a patient's unit

T. Clean--Not contaminated with pathogens

II. Ways diseases are spread

A. Contact

(NOTE: The disease is spread by actually touching the infected person or articles he/she has handled.)

B. Vehicle

(NOTE: The disease is spread by using or ingesting contaminated food, water, or medication or by direct transfer of blood from an infected person to another.)

C. Airborne

(NOTE: The disease is spread through dust or droplet particles in the air.)

D. Vector

(NOTE: An insect, such as mosquito or tick, carries the disease from an animal or one person to another.)

III. Prevention of spread of disease

A. By isolating the patient and everything that is contacted

B. By destroying the organisms that leave the patient's body

C. By taking protective measures when caring for the infectious person

INFORMATION SHEET

IV. Purposes of isolation technique

  A. Remove patient from source of infection

  B. Protect patient from contracting another disease or infection

  C. Protect other patients and personnel

  D. Provide safe disposal or disinfection of equipment

V. Diseases affecting specific systems and ways they are spread

  A. Skin and mucous membranes

    1. Diseases--Mononucleosis, syphilis, gonorrhea, impetigo, scabies, staphylococcal infection, gas gangrene, and rabies

    2. Spread by--Contact with an open wound or exudate containing the pathogen

  B. Respiratory

    1. Diseases--Upper respiratory infections, pneumonia, diptheria, tuberculosis, measles, mumps, and the common cold

    2. Spread by--Coughing, sneezing, or talking

  C. Gastrointestinal

    1. Diseases--Typhoid, dysenteries, infectious hepatitis, and contagious diarrhea in children

    2. Spread by--Contact with contaminated excreta

  D. Blood and serum

    1. Diseases--Malaria, syphilis, and serum hepatitis

    2. Spread by--Contaminated needle, by an insect such as a mosquito, or by a blood transfusion from an infected person

VI. Isolation technique for various systems

(NOTE: Isolation procedures and policies vary with the institution. The following are some general rules of good practice.)

  A. Diseases of the skin and mucous membrane

    1. Full isolation technique is required

    2. Anyone entering the room must wear gown, mask, and gloves

INFORMATION SHEET

3. All disposable items must be burned
4. All reusable articles must be disinfected when taken from the unit

B. Diseases of the respiratory system

1. Masks and gowns must be worn by all who enter the room
2. Oral and nasal discharges must be disposed of by burning
3. Excreta must be disinfected before disposal in some cases
4. All articles taken from the room must be disinfected

C. Diseases of the gastrointestinal system

1. Gowns must be worn by all persons who enter the room
2. Masks must be worn if the patient is vomiting or coughing
3. All items taken from the room must be disinfected
4. Excreta may have to be disinfected before disposal
5. Screening to eliminate flies is essential

D. Diseases of blood and serum

1. Syringes and needles must be disposed of properly or disinfected when taken from the unit
2. Any dressing with drainage from wounds should be burned

VII. General principles of isolation

A. Each nurse is responsible for learning about and maintaining the isolation technique because procedures vary with equipment and facilities

B. Isolation technique is effective only when each worker knows and follows the procedure precisely

C. Thorough and frequent handwashing is the most essential procedure in isolation technique

D. Equipment should be kept to the minimum necessary

E. Anything taken from the unit must be disinfected, sterilized, or burned

INFORMATION SHEET

F. Articles which cannot be autoclaved or soaked in disinfectant should be washed or wiped off with disinfectant and aired for twelve hours

Examples: Stethoscopes, sphygmomanometers

G. Books, magazines, and newspapers should be burned

H. Nursing care should be planned to provide needed equipment and avoid unnecessary trips in and out of the unit

I. Procedures may be carried out more effectively by two workers when extensive nursing care is required; one person remains clean and outside the unit and the second person works in the unit until nursing care is completed

J. Strict adherence to technique makes it possible to isolate patients with different diseases in one room; it is better procedure to isolate like diseases in the same room

K. Isolation units must be properly identified

L. All items removed from the isolation unit must be labeled Isolation

VIII. Wearing isolation clothing

A. Mask and head covering, when worn, are put on just before entering the unit

B. Masks, to be effective, must be changed frequently according to type used

(NOTE: If a mask or gown becomes damp, it is no longer effective.)

C. Mask should be removed and discarded or placed in a soiled linen receptacle when not in use; the mask should not be worn as a necklace and then put back on

D. Cloth gowns may be used more than one time if the persons using them follow a strict routine

E. Disposable gowns are used only once and then discarded

F. Thorough handwashing is essential before and after removal of the gown and after removal of the mask

G. Gloves when needed should be worn only once and then discarded or disinfected

H. In some isolation units, uniform or street clothing is replaced by a scrub dress or suit similar to those worn by surgical personnel; in such instances, the scrub dress or suit is never worn away from the isolation unit or ward

INFORMATION SHEET

- I. Insides of gowns, the fasteners, neckband, and surrounding areas are kept uncontaminated
- J. Discard gown when in doubt about its previous use
- K. Disposable slippers or other shoe coverings should be used; if not available, a mat treated with disinfectant should be placed at the exit from the unit for cleaning the shoe soles

IX. Reverse or protective isolation

- A. It is used mainly to protect patients with extensive burns or wounds and for patients with lowered resistance
- B. Doors to the unit are kept closed
- C. All persons must scrub as for a surgical procedure and wear sterile or clean mask, gown, cap, and gloves while providing care
- D. All equipment to be taken into unit is sterilized
- E. Books, magazines, and newspapers are sterilized in hot air for one hour at 150°C (300°F)
- F. Disposable or sterile food containers and utensils are used
- G. Concurrent disinfection is carried out at least once daily

X. Double bagging

- A. Procedure is carried out by two persons
- B. One person outside the unit remains clean; a second person works inside the unit
- C. Clean person holds a cuffed, clean bag open at entrance to unit
- D. Second person places bagged items from the unit inside the clean bag
- E. Clean person folds over the top of the bag and fastens it
- F. Bags are labeled to indicate what contaminated articles are inside

XI. Isolation procedures

- A. Linens
  - 1. Only needed linen should be carried into the unit
  - 2. Receptacle for soiled linen should be kept in the unit

INFORMATION SHEET

3. Most linens can be effectively disinfected by the usual laundering process

   (NOTE: Linens contaminated by spore-forming organisms such as tetanus or anthrax should be sterilized by autoclave before being sent to the laundry.)

4. Double bag linens when removing them from the unit

5. Disposable linen is discarded as any other solid waste

B. Utensils

(NOTE: Utensils include items such as bedpan, washbasin, urinal, kidney basin, soap dish, drinking glass, and water pitcher usually kept at a patient's bedside as well as surgical instruments or instruments used for examinations.)

1. Concurrent disinfection is carried out each time equipment in the unit is used

2. Terminal disinfection is necessary when equipment is removed from the room or unit

3. Disposable equipment is discarded as any other solid waste

C. Food utensils

1. Disposable table settings are discarded as any other solid waste

2. Reusable dishes, trays, and flatware are double bagged and labeled when taken from the unit

D. Bedpans, urinals, and excreta

1. These should be emptied immediately

2. Concurrent and terminal disinfection of bedpan and urinal is essential

E. Other body discharges

1. Discharges on tissue wipes from the eyes, nose, and mouth and contaminated dressings are double bagged for burning

2. Contaminated tissues and dressings should be disposed of as quickly as possible to prevent dispersion of infective organisms

INFORMATION SHEET

F. Administering medications

1. Observe isolation technique as indicated
2. Dispose of needles and syringes in a safe manner to protect housekeeping personnel

G. Sending specimens to the laboratory

1. Keep outside of specimen container clean, or transfer to a clean container
2. Label and bag the specimen outside the unit before taking it to the laboratory

H. Taking vital signs

1. Equipment needed is left in the unit, if possible
2. Disinfect equipment when it is removed from the unit
3. Use a wall clock with a second hand, if possible
4. Protect a watch by placing it on a clean paper towel or in a plastic bag; remove it from the unit with clean hands

I. Transporting to x-ray or other hospital areas

1. Have patient wear a clean gown and mask
2. Drape wheelchair or stretcher with a clean blanket
3. Wrap patient in blanket, leaving face uncovered
4. Tell the x-ray or other department what type of infection the patient has so proper precautions can be taken

J. Care of the body after death

1. Care for the body and wrap in a shroud in the usual manner
2. Drape stretcher with a second clean shroud
3. Transfer wrapped body to the stretcher
4. Clean person wraps the body, touching only the outside of the clean second shroud
5. Label the outside wrapper so the pathologist or mortician will know that the patient was in isolation
6. Transport in the usual manner

INFORMATION SHEET

K. Terminal disinfection

1. Patient is bathed and dressed in clean garments before discharge or transfer

2. Everything removed from the unit must be disinfected or sterilized

3. Unit should be cleaned and aired

XII. Nursing responsibilities to meet the emotional needs of the isolated patient

A. Explain isolation to patient and family

1. Reasons for isolation

2. How it is carried out and how they can help

3. What articles are permitted

4. Disinfection for articles on removal

B. Provide reassurance and emotional support

C. Check the patient frequently to keep him/her from feeling neglected or lonely

D. Provide diversions for the patient since he/she will be alone much of the time

(NOTE: With a little extra effort, radio or TV and reading material can be provided.)

ISOLATION TECHNIQUE
UNIT VI

JOB SHEET #1--PUT ON AND REMOVE MASK AND GOWN

I. Equipment

A. Mask

B. Gown

C. Head covering

II. Procedure

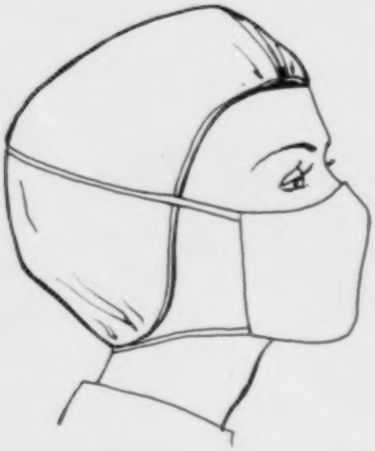
A. Wash hands

B. Put on head covering

C. Position mask over both nose and mouth (Figure 1)

(CAUTION: Check mask for fit and comfort. The face and mask must not be touched again after entering the isolation unit until you have washed your hands.)

FIGURE 1



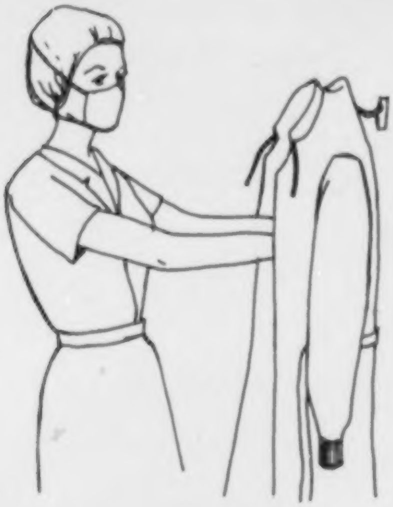
D. Put on gown

1. If gown is folded, pick it up by the neckband and shake slightly to straighten

JOB SHEET #1

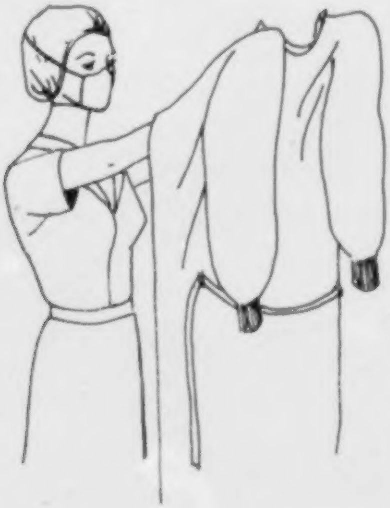
2. On unfolded gown or one hanging on a hook, slip hands inside the gown near the shoulder line (Figure 2)

FIGURE 2



3. Slide gown onto arms by holding the arms forward and slightly above the shoulder level (Figure 3)

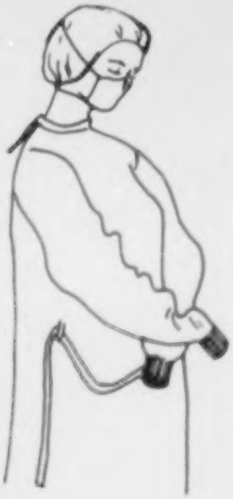
FIGURE 3



JOB SHEET #1

4. Pull one sleeve on, using opposite hand inside the second sleeve (Figure 4)

FIGURE 4



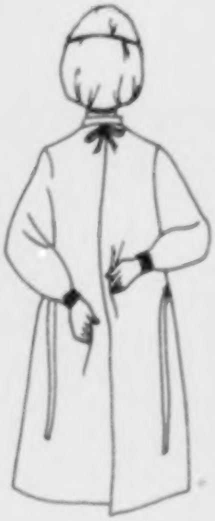
5. Pull second sleeve on

   (CAUTION: Do not touch the outside of the gown with the hands. If by accident you do touch the outside of the gown, wash your hands before fastening the ties.)

6. Fasten the gown at the neck

7. Grasp the gown at the waistline and lap the right side over the left side (Figure 5)

FIGURE 5



JOB SHEET #1

8. Hold the overlapped edge with the right hand

9. Grasp left belt and pull it around to the back

10. Pick up right belt, draw into place, and tie belt

(CAUTION: Your hands are now contaminated. The gown below shoulder level is always considered to be contaminated.)

III. Procedure to remove gown and mask

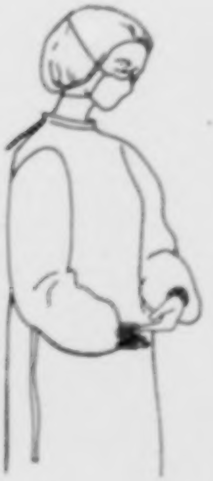
A. Untie the belt

B. Wash and dry the hands

C. Unfasten the neck of the gown

D. Pull off the first sleeve by slipping the fingers of the other hand inside the cuff (Figure 6)

FIGURE 6

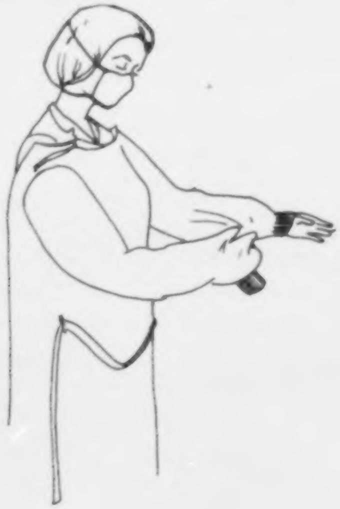


(CAUTION: Do not touch the outside of the cuff. The outside is contaminated; the inside of the cuffs and the hands are clean.)

JOB SHEET #1

E. Grasp the second sleeve with the hand inside the first sleeve (Figure 7)

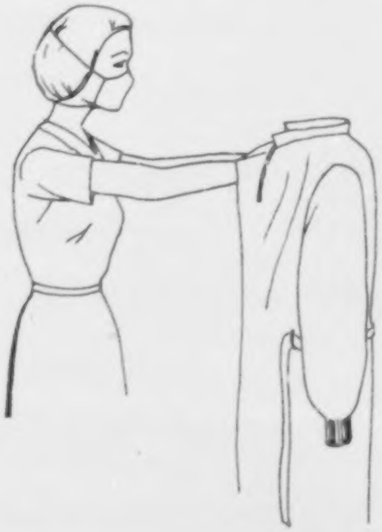
FIGURE 7



F. Pull off the second sleeve

G. Fold the gown without touching the outer surface of the gown by bringing the shoulder seams together; hold the gown away from your uniform (Figure 8)

FIGURE 8

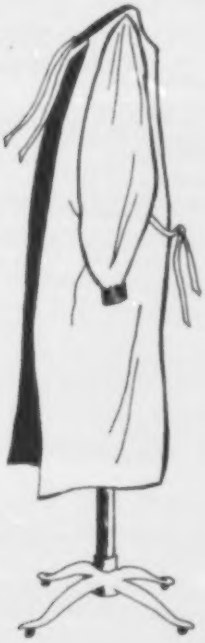


H. Grasp the back of the neck with one hand and the front of the neck with the other hand

JOB SHEET #1

I. Place the neck of the gown on the hook (Figure 9)

FIGURE 9



(NOTE: When gown is to be discarded or is soiled, omit steps H and I and place gown in receptacle for soiled linen.)

J. Wash hands

K. Remove and discard mask and head covering

L. Wash hands

ISOLATION TECHNIQUE
UNIT VI

TEST

1. Match the terms on the right to the correct definition. (Answers for "a" through "j" are on this page.)

_______a. Large blister filled with fluid

_______b. Acute, infectious, inflammatory disease of the liver caused by a virus; transmitted orally; may be epidemic

_______c. Acute, infectious, inflammatory skin disease caused by streptococci or staphylococci and characterized by vesicles and bullae which rupture and develop crusts

_______d. Form of viral hepatitis transmitted by the parenteral injection of human blood or blood products contaminated with the hepatitis virus

_______e. Painful straining to empty the bowels or bladder without the evacuation of feces or urine

_______f. Nursing care procedures to prevent the spread of an infection or contagious disease from one person to another

_______g. Small blister filled with fluid

_______h. Inflammation of the intestine, particularly the colon, due to varied causes; characterized by abdominal pain, tenesmus, and diarrhea with blood or mucus

_______i. Separation of persons having an infection or contagious disease from others; separation of contaminated articles

_______j. Waste material cast off by the body

1. Vesicle
2. Tenesmus
3. Dysentery
4. Isolation
5. Infectious hepatitis
6. Excreta
7. Impetigo
8. Bulla
9. Isolation technique
10. Serum hepatitis

(Answers to "k" through "t" are on this page.)

_______k. Killing of pathogenic organisms by chemical or physical means; commonly used on inanimate objects

_______l. Contagious skin disorder caused by a minute insect which burrows under the skin; causes intense itching chiefly at night

_______m. Necrosis of a part due to failure of blood supply, to disease, or to injury

_______n. Pathological death of a cell or group of cells in contact with living tissue

_______o. Disinfection carried on daily or as often as necessary in patient care

_______p. Modified surgical asepsis to prevent the introduction of disease-producing organisms into a patient's unit

_______q. Not contaminated with pathogens

_______r. Exposed to pathogenic organisms

_______s. Form of gangrene occurring in massive wounds; caused by anaerobic bacilli; characterized by high fever, offensive purulent discharge, and presence of gas bubbles in the tissues

_______t. Care of the patient's unit and belongings after the infectious period has ended or when articles are removed from the unit

11. Scabies
12. Gas gangrene
13. Clean
14. Terminal disinfection
15. Disinfection
16. Gangrene
17. Reverse isolation technique
18. Necrosis
19. Contaminated
20. Concurrent disinfection

2. List four ways diseases are spread.

a.

b.

c.

d.

3. List three ways to prevent the spread of disease.
   a.
   b.
   c.
4. List four purposes of isolation technique in a health facility.
   a.
   b.
   c.
   d.
5. List diseases affecting specific systems and ways they are spread.
   a. Respiratory
      1) Diseases
      2) Spread by
   b. Gastrointestinal
      1) Diseases
      2) Spread by
   c. Blood and serum
      1) Diseases
      2) Spread by
   d. Skin and mucous membranes
      1) Diseases
      2) Spread by

6. Describe isolation technique for diseases affecting the specific systems.
   - a. Respiratory
   - b. Gastrointestinal
   - c. Blood and serum
   - d. Skin and mucous membranes

7. List eight general principles of isolation.
   - a.
   - b.
   - c.
   - d.
   - e.
   - f.
   - g.
   - h.

8. Discuss the wearing of isolation clothing.

9. Describe reverse or protective isolation.

10. Describe double bagging.

11. Describe isolation procedures for the following articles and procedures.

    a. Linens

    b. Food utensils

    c. Administering medications

    d. Utensils

e. Sending specimens to the laboratory

f. Terminal disinfection

g. Bedpans, urinals, and excreta

h. Other body discharges

i. Care of the body after death

j. Transporting to x-ray or other hospital areas

k. Taking vital signs

12. Discuss nursing responsibilities to meet the emotional needs of the isolated patient.

13. Demonstrate the ability to put on and remove a mask and gown.

(NOTE: If this has not been accomplished prior to the test, ask the instructor when the above activity should be completed.)

ISOLATION TECHNIQUE
UNIT VI

ANSWERS TO TEST

1. a. 8
   b. 5
   c. 7
   d. 10
   e. 2
   f. 9
   g. 1
   h. 3
   i. 4
   j. 6
   k. 15
   l. 11
   m. 16
   n. 18
   o. 20
   p. 17
   q. 13
   r. 19
   s. 12
   t. 14

2. a. Contact
   b. Vehicle
   c. Airborne
   d. Vector

3. a. By isolating the patient and everything that is contacted
   b. By destroying the organisms that leave the patient's body
   c. By taking protective measures when caring for the infectious person

4. a. Remove patient from source of infection
   b. Protect patient from contracting another disease or infection
   c. Protect other patients and personnel
   d. Provide safe disposal or disinfection of equipment

5 a. Respiratory
   1) Diseases--Upper respiratory infections, pneumonia, diptheria, tuberculosis, measles, mumps, and the common cold
   2) Spread by--Coughing, sneezing, or talking

   b. Gastrointestinal
   1) Diseases--Typhoid, dysenteries, infectious hepatitis, and contagious diarrhea in children
   2) Spread by--Contact with contaminated excreta

c. Blood and serum

   1) Diseases--Malaria, syphilis, and serum hepatitis

   2) Spread by--Contaminated needle, by an insect such as a mosquito, or by a blood transfusion from an infected person

d. Skin and mucous membranes

   1) Diseases--Mononucleosis, syphilis, gonorrhea, impetigo, scabies, staphylococcal infection, gas gangrene, and rabies

   2) Spread by--Contact with an open wound or exudate containing the pathogen

6. Description should include:

a. Respiratory

   1) Masks and gowns must be worn by all who enter the room

   2) Oral and nasal discharges must be disposed of by burning

   3) Excreta must be disinfected before disposal in some cases

   4) All articles taken from the room must be disinfected

b. Gastrointestinal

   1) Gowns must be worn by all persons who enter the room

   2) Masks must be worn if the patient is vomiting or coughing

   3) All items taken from the room must be disinfected

   4) Excreta may have to be disinfected before disposal

   5) Screening to eliminate flies is essential

c. Blood and serum

   1) Syringes and needles must be disposed of properly or disinfected when taken from the unit

   2) Any dressing with drainage from wounds should be burned

d. Skin and mucous membrane

   1) Full isolation technique is required

   2) Anyone entering the room must wear gown, mask, and gloves

   3) All disposable items must be burned

   4) All reusable articles must be disinfected when taken from the unit

7. Any eight of the following:

   a. Each nurse is responsible for learning about and maintaining the isolation technique because procedures vary with equipment and facilities

   b. Isolation technique is effective only when each worker knows and follows the procedures precisely

   c. Thorough and frequent handwashing is the most essential procedure in isolation technique

   d. Equipment should be kept to the minimum necessary

   e. Anything taken from the unit must be disinfected, sterilized, or burned

   f. Articles which cannot be autoclaved or soaked in disinfectant should be washed or wiped off with disinfectant and aired for twelve hours

   g. Books, magazines, and newspapers should be burned

   h. Nursing care should be planned to provide needed equipment and avoid unnecessary trips in and out of the unit

   i. Procedures may be carried out more effectively by two workers when extensive nursing care is required; one person remains clean and outside the unit and the second person works in the unit until nursing care is completed

   j. Strict adherence to technique makes it possible to isolate patients with different diseases in one room; it is better procedure to isolate like diseases in the same room

   k. Isolation units must be properly identified

   l. All items removed from the isolation unit must be labeled Isolation

8. Discussion should include:

   a. Mask and head covering, when worn, are put on just before entering the unit

   b. Masks, to be effective, must be changed frequently according to type used

   c. Mask should be removed and discarded or placed in a soiled linen receptacle when not in use; the mask should not be worn as a necklace and then put back on

   d. Cloth gowns may be used more than one time if the persons using them follow a strict routine

   e. Disposable gowns are used only once and then discarded

f. Thorough handwashing is essential before and after removal of the gown and after removal of the mask

g. Gloves when needed should be worn only once and then discarded or disinfected

h. In some isolation units, uniform or street clothing is replaced by a scrub dress or suit similar to those worn by surgical personnel; in such instances, the scrub dress or suit is never worn away from the isolation unit or ward

i. Insides of gowns, the fasteners, neckband, and surrounding areas are kept uncontaminated

j. Discard gown when in doubt about its previous use

k. Disposable slippers or other shoe coverings should be used; if not available, a mat treated with disinfectant should be placed at the exit from the unit for cleaning the shoe soles

9. Description should include:

a. It is used mainly to protect patients with extensive burns or wounds and for patients with lowered resistance

b Doors to the unit are kept closed

c. All persons must scrub as for a surgical procedure and wear sterile or clean mask, gown, cap, and gloves while providing care

d. All equipment to be taken into unit is sterilized

e. Books, magazines, and newspapers are sterilized in hot air for one hour at 150°C (300°F)

f. Disposable or sterile food containers and utensils are used

g. Concurrent disinfection is carried out at least once daily

10. Description should include:

a. Procedure is carried out by two persons

b. One person outside the unit remains clean; a second person works inside the unit

c. Clean person holds a cuffed, clean bag open at entrance to unit

d. Second person places bagged items from the unit inside the clean bag

e. Clean person folds over the top of the bag and fastens it

f. Bags are labeled to indicate what contaminated articles are inside

11. Description should include:
    - a. Linens
        - 1) Only needed linen should be carried into the unit
        - 2) Receptacle for soiled linen should be kept in the unit
        - 3) Most linens can be effectively disinfected by the usual laundering process
        - 4) Double bag linens when removing them from the unit
        - 5) Disposable linen is discarded as any other solid waste
    - b. Food utensils
        - 1) Disposable table settings are discarded as any other solid waste
        - 2) Reusable dishes, trays, and flatware are double bagged and labeled when taken from the unit
    - c. Administering medications
        - 1) Observe isolation technique as indicated
        - 2) Dispose of needles and syringes in a safe manner to protect housekeeping personnel
    - d. Utensils
        - 1) Concurrent disinfection is carried out each time equipment in the unit is used
        - 2) Terminal disinfection is necessary when equipment is removed from the room or unit
        - 3) Disposable equipment is discarded as any other solid waste
    - e. Sending specimens to the laboratory
        - 1) Keep outside of specimen container clean, or transfer to a clean container
        - 2) Label and bag the specimen outside the unit before taking it to the laboratory
    - f. Terminal disinfection
        - 1) Patient is bathed and dressed in clean garments before discharge or transfer
        - 2) Everything removed from the unit must be disinfected or sterilized

    3) Unit should be cleaned and aired

g. Bedpans, urinals, and excreta

    1) These should be emptied immediately

    2) Concurrent and terminal disinfection of bedpan and urinal is essential

h. Other body discharges

    1) Discharges on tissue wipes from the eyes, nose, and mouth and contaminated dressings are double bagged for burning

    2) Contaminated tissues and dressings should be disposed of as quickly as possible to prevent dispersion of infective organisms

i. Care of the body after death

    1) Care for the body and wrap in a shroud in the usual manner

    2) Drape stretcher with a second clean shroud

    3) Transfer wrapped body to the stretcher

    4) Clean person wraps the body, touching only the outside of the clean second shroud

    5) Label the outside wrapper so the pathologist or mortician will know that the patient was in isolation

    6) Transport in the usual manner

j. Transporting to x-ray or other hospital areas

    1) Have patient wear a clean gown and mask

    2) Drape wheelchair or stretcher with a clean blanket

    3) Wrap patient in blanket, leaving face uncovered

    4) Tell the x-ray or other department what type of infection the patient has so proper precautions can be taken

k. Taking vital signs

    1) Equipment needed is left in the unit, if possible

    2) Disinfect equipment when it is removed from the unit

    3) Use a wall clock with a second hand, if possible

    4) Protect a watch by placing it on a clean paper towel or in a plastic bag; remove it from the unit with clean hands

12. Discussion should include:

    a. Explain isolation to patient and family

        1) Reasons for isolation

        2) How it is carried out and how they can help

        3) What articles are permitted

        4) Disinfection for articles on removal

    b. Provide reassurance and emotional support

    c. Check the patient frequently to keep him/her from feeling neglected or lonely

    d. Provide diversions for the patient since he/she will be alone much of the time

13. Performance skills will be evaluated to the satisfaction of the instructor.

PREOPERATIVE AND POSTOPERATIVE CARE
UNIT VII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to discuss nursing responsibilities in postoperative care and describe the care of patients following abdominal and vaginal surgery. The student should be able to demonstrate the ability to determine nursing. responsibility and write a care study. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with preoperative and postoperative care to the correct definitions.
2. Discuss the procedures performed prior to surgery.
3. List fears or anxieties which the patient facing surgery may have.
4. Discuss the nurse's responsibilities concerning the patient's fears.
5. List types of anesthesia and aids to anesthesia.
6. Discuss nursing responsibilities in the immediate postoperative period.
7. Discuss nursing responsibilities after the patient returns to the unit.
8. List symptoms and nursing responsibilities in postoperative complications.
9. Describe nursing responsibilities for a patient following abdominal and vaginal surgery.
10. Demonstrate the ability to determine nursing responsibility.
11. Write a care study.

PREOPERATIVE AND POSTOPERATIVE CARE
UNIT VII

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information sheet.

  C. Discuss terminal and specific objectives.

  D. Discuss information sheet.

  E. Arrange for an anesthetist to speak to the class about

    1. Types of anesthesia used most frequently in this institution.

    2. Factors which affect the choice of anesthesia.

    3. Particular points of care in the postoperative period.

  F. Visit the recovery room for orientation to

    1. Location in relation to surgery and medical-surgical units.

    2. Equipment.

    3. Staffing.

  G. Obtain sample of the institution's preoperative checklist for each student, if one is used.

  H. Assist with assignment sheets.

  I. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Complete assignment sheets.

  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Assignment sheets

    1. Assignment Sheet #1--Determine Nursing Responsibility

    2. Assignment Sheet #2--Write a Care Study

  D. Test

  E. Answers to test

II. References:

  A. *Arkansas Curriculum Guide for Practical Nurse Education.* Little Rock, Arkansas: Health Occupations Education, 1973.

  B. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

  C. Harmer, Bertha, and Virginia Henderson. *Textbook of the Principles and Practice of Nursing.* New York: The Macmillan Company, 1967.

  D. Johnston, Dorothy F. *Total Patient Care.* St. Louis, Missouri: The C. V. Mosby Company, 1972.

  E. Smith, Genevieve E. *A Teaching Plan for the Practical Nursing Curriculum.* New Brunswick, New Jersey: Vocational-Technical Curriculum Laboratory, 1973.

  F. Thompson, Ella M., and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

III. Filmstrips:

  A. "Preoperative and Postoperative Care." Trainex Corporation.

  B. "Preoperative Skin Preparation." Trainex Corporation.

  C. "O. R. Skin Preparation." Trainex Corporation.

  D. "Hypovolemic Shock." Trainex Corporation.

  E. "Shock: Cellular Pathophysiology." Trainex Corporation.

F. "Septic Shock." Trainex Corporation.

G. "Introduction to Shock." Trainex Corporation.

H. "Shock and Hemorrhage." Trainex Corporation.

PREOPERATIVE AND POSTOPERATIVE CARE
UNIT VII

INFORMATION SHEET

I. Terms and definitions

A. Pre--Prefix signifying *before*

B. Post--Prefix denoting *after* or *behind*

C. Cicatrix--Fibrous connective tissue which follows the healing of a wound; a scar

D. Umbilicus--Round, depressed cicatrix in the median line of the abdomen marking the site of the opening that gave passage to the blood vessels in fetal life; the navel

E. Anesthesia--Loss of sensation with or without unconsciousness

F. Disfigurement--Marred or scarred appearance

G. Regional--Pertaining to an area or part

H. General anesthesia--Loss of sensation over the entire body

I. Local anesthesia--Loss of sensation in a small area

J. Recovery room--Room or area with special equipment for the care of a patient immediately following surgery

K. Sanguinous--Pertaining to or containing blood

L. Serosanguinous--Containing both serum and blood

M. Shock--Depressed condition of many of the body functions due to failure of enough blood to circulate through the body following injury

N. Thrombophlebitis--Inflammation of a vein associated with thrombosis

O. Pitting edema--Swelling of the tissues due to collection of fluid and characterized by preservation for a short time of indentations on the skin made by pressing with the fingers

P. Prosthesis--Artificial replacement or enhancement of a body part

INFORMATION SHEET

II. Procedures performed prior to surgery

- A. Preoperative orders
    1. Preparation of site
    2. Medications

       (NOTE: Perform all preoperative procedures before sedative is given.)
    3. Treatments
    4. Diagnostic tests
    5. Food and fluids
- B. Permission for surgery
    1. Signed permit is required for all persons who are to have surgery
    2. Permit must be signed by the patient, next of kin, or guardian before preoperative medication is given
    3. Signature must be witnessed by a competent person other than a family member
    4. Refusal to sign permit must be reported to the charge nurse and physician
- C. Physical examination--Usually performed after admission to the hospital but may be done in the physician's office
- D. Preoperative teaching--Prepares patient and family physically and emotionally for postoperative procedures and results
- E. Care of valuables
    1. Place in safekeeping
    2. Entrust to family if requested
    3. Do no leave unattended at bedside
    4. Record disposition

INFORMATION SHEET

F. Personal care

1. Identification
2. Bath
3. Clean hospital gown
4. Mouth care

   (NOTE: Determine institutional policy concerning dentures. In some instances dentures are removed before administration of anesthesia; in other cases dentures may be left in to aid in fitting the anesthesia mask to the patient's face.)

5. Urination
6. Removal of nail polish, makeup, jewelry, undergarments, and any prosthesis
7. Side rails after sedation
8. Vital signs
9. Proper draping for transfer to surgery

G. Reasons for postponement of surgery

1. Abnormal vital signs such as temperature elevation
2. Upper respiratory infection
3. Extreme anxiety
4. Abnormal laboratory findings

H. Patient records

1. Complete and accurate nurses' notes
2. Signed surgery permit
3. Recent laboratory and x-ray reports
4. Complete and signed preoperative check list

INFORMATION SHEET

I. Preparation of bed and unit after patient is transferred to surgery

1. Prepare surgical bed
2. Arrange furniture so patient can be transferred easily
3. Provide emesis basin, tissues, sphygmomanometer, stethoscope, tongue depressor, paper and pen, suction equipment, and oxygen equipment

III. Fears or anxieties which the patient may have

A. Temporary loss of independence

B. Pain

C. Anesthesia and/or unconsciousness

D. Disability or changes in life style

E. Disfigurement

F. Separation from family or friends

G. The unknown

IV. Nurse's responsibilities concerning the patient's fears

A. Describe procedures to patient and family as necessary

B. Give reasons for tests and procedures

C. Inform patient of hospital routine

(NOTE: Tell him whether he will go to recovery room, what he can expect it to look like, whether side rails will be used, and any other pertinent information which will aid in his adjustment to the surgery and postoperative care.)

D. Describe parenteral administrations or other procedures which are usually a part of postoperative care and treatment

E. Explain importance of breathing exercises and respiratory therapy

F. Provide opportunity for patient to ask questions or express his fears and anxieties

G. Reassure the family as necessary

H. Notify physician of patient's fears and concerns; nursing personnel usually do not answer questions concerning diagnosis or prognosis

INFORMATION SHEET

V. Types of anesthesia and examples

- A. Regional
  - 1. Local

    Examples: Procaine, Pontocaine, Xylocaine, ethyl chloride spray
  - 2. Spinal

    (NOTE: Drugs such as Procaine, Nupercaine, Pontocaine are injected into the lumbar spinal region.)
  - 3. Caudal

    (NOTE: Drugs such as Procaine, Pontocaine, Xylocaine are injected into the sacral area.)
- B. General
  - 1. Inhalation

    Examples: Ether, chloroform, cyclopropane, or nitrous oxide
  - 2. Intravenous

    Examples: Pentothal, Amytal, Nembutal
  - 3. Rectal

    Examples: Avertin, pentothal, ether
- C. Hypothermia
  - 1. Local or regional

    (NOTE: The affected part is cooled by using special equipment or by packing in ice.)
  - 2. General

    (NOTE: The temperature of the entire body is lowered by cooling the blood or by using cooling blankets.)
- D. Aids to anesthesia
  - 1. Muscle relaxant

    (NOTE: Drugs such as Curare and Anectine increase relaxation of muscles during anesthesia.)

INFORMATION SHEET

2. Tranquilizer

   (NOTE: Phenergan, Sparine, and Vistaril are drugs which reduce tension and anxiety and may reduce incidence of vomiting during or following anesthesia.)

VI. Nursing responsibilities in the immediate postoperative period

(NOTE: These are usually performed in a recovery room.)

A. Transfer patient from surgical stretcher to recovery bed as smoothly and quickly as possible

B. Provide for safety

C. Position patient for ease of breathing

D. Check the physician's and anesthetist's orders concerning

   1. Oxygen
   2. Drainage tubes
   3. Medications
   4. Parenteral fluids
   5. Suctioning

E. Observe as soon as possible and record

   1. Vital signs
   2. Color
   3. Dressings
   4. Level of conciousness

F. Monitor at prescribed intervals

   1. Vital signs
   2. Color
   3. Dressings for drainage
   4. Drainage tubes
   5. Parenteral fluids

INFORMATION SHEET

6. Need for suctioning
7. Level of consciousness
8. Pain or discomfort

VII. Nursing responsibilities after the patient returns to the unit

A. Obtain report from recovery room staff prior to patient's return concerning special equipment which will be needed

B. Assist in transferring patient to his bed

C. Connect oxygen and/or drainage as necessary

D. Put up side rails

E. Receive report and patient record from recovery room nurse

F. Observe as soon as possible and compare with those on record

   1. Vital signs
   2. Dressings for drainage
   3. Drainage tubes
   4. Parenteral fluids
   5. Need for suctioning
   6. Level of consciousness

G. Carry out any other orders

H. Notify family that patient has returned

I. Monitor parenteral fluids, intake and output, oxygen, and vital signs at regular intervals

J. Observe intake and output

K. Assist the patient if he vomits

L. Provide more or less cover as needed for warmth and comfort

INFORMATION SHEET

M. Reinforce dressings as needed; physician's order is required before changing dressings

N. Position as prescribed

O. Assist with breathing and coughing exercises

P. Assist with movement and ambulation to

1. Increase circulation
2. Prevent distention
3. Induce urination

Q. Observe, report, and record any unusual symptoms

VIII. Symptoms and nursing responsibilities in postoperative complications

A. Hemorrhage

1. Symptoms
   a. Excessive sanguinous or serosanguinous drainage
   b. Bloody drainage from suction or drainage apparatus
   c. Hematemesis
   d. Symptoms of shock
2. Nursing responsibilities
   a. Report symptoms immediately to charge nurse or physician
   b. Apply pressure on site of hemorrhage or pressure point if appropriate
   c. Keep patient quiet
   d. Position patient in either recumbent position or with extremities elevated to increase blood supply to head unless contraindicated
   e. Provide for warmth as necessary
   f. Prepare for administration of parenteral fluids or blood transfusion
   g. Monitor vital signs

INFORMATION SHEET

B. Shock

1. Symptoms

   a. Drop in blood pressure

   b. Rapid, weak pulse

   c. Rapid, shallow respirations

   d. Cool, moist skin

   e. Below normal temperature

   f. Pallor or cyanosis, particularly lips and nails

   g. Restlessness and anxiety

   h. Thirst

   i. Nausea and vomiting

   j. Loss of consciousness

2. Nursing responsibilities

   a. Report symptoms to charge nurse or physician immediately

   b. Elevate foot of bed unless contraindicated

   c. Keep patient only warm enough to prevent heat loss

   d. Restrict fluids and foods until physician checks patient

   e. Check vital signs at regular intervals

   f. Administer oxygen as indicated

   g. Prepare for administration of parenteral fluids

   h. Keep patient quiet and in recumbent position

C. Thrombophlebitis

1. Symptoms

   a. Pain or cramp in the calf of the leg

   b. Redness

INFORMATION SHEET

- c. Swelling
- d. Temperature elevation
- e. Fatigue
- f. Anorexia

2. Nursing responsibilities
   - a. Aid in prevention by
     1. Early exercise and ambulation
     2. Use of fitted elastic bandages
   - b. Keep leg at rest after symptoms occur
   - c. Avoid any strain or massage of the affected leg
   - d. Support leg on soft pillows as prescribed
   - e. Use cradle to carry weight of bedcovers
   - f. Administer anticoagulant as prescribed
   - g. Maintain bedrest while temperature is elevated
   - h. Increase activity as prescribed

D. Hypostatic pneumonia

1. Symptoms
   - a. Slight temperature elevation
   - b. Increased pulse rate
   - c. Rapid, shallow respirations
   - d. Slight cough
2. Nursing responsibilities
   - a. Turn frequently
   - b. Observe character of respirations
   - c. Encourage deep breathing and coughing exercises

INFORMATION SHEET

- d. Maintain correct posture to allow for adequate expansion of the lungs
- e. Assist patient in using blow bottles or other respiratory aids

E. Wound infection

- 1. Symptoms
  - a. Temperature elevation
  - b. Increased pulse rate
  - c. Pain, tenderness, or swelling at wound site
  - d. Redness or inflammation of wound site
  - e. Foul smelling, purulent drainage
- 2. Nursing responsibilities
  - a. Maintain aseptic technique
    - 1) Wash hands frequently
    - 2) Keep patient and dressings clean and dry
    - 3) Disinfect equipment
  - b. Encourage adequate food and fluid intake
  - c. Provide for adequate rest and sleep
  - d. Assist with exercises and activity
  - e. Adminster antibiotics as prescribed

F. Gastrointestinal disturbances

- 1. Symptoms
  - a. Abdominal distention
  - b. Gas pains
  - c. Pain or cramping in abdomen
  - d. Nausea and vomiting

INFORMATION SHEET

e. Dryness of mouth

f. Constipation

2. Nursing responsibilities

a. Provide rest for gastrointestinal tract by restricting food and fluid intake immediately before and after surgery

b. Avoid cold and high glucose beverages which may cause gas

c. Change position frequently

d. Ambulate unless contraindicated

e. Insert rectal tube as prescribed

f. Keep patient quiet to decrease vomiting

g. Provide mouth care frequently

G. Infiltration of intravenous infusion

1. Symptoms

a. Area around needle becomes firm, cold, and pale

b. Patient complains of pain or numbness in affected area

c. Blood fails to return in the tubing when the bottle of fluid is lowered below the level of the needle

d. Pitting edema may be noticed

2. Nursing responsibilities

a. Observe administration site frequently

b. Immobilize site of administration

c. Explain necessity of immobilization

d. Restrain affected limb as needed

e. Remain with patient as necessary to maintain immobility

INFORMATION SHEET

IX. Nursing responsibilities following abdominal and vaginal surgery

A. Abdominal

1. Support abdominal incision during coughing and deep breathing exercises

2. Maintain prescribed position

3. Maintain suction and/or drainage of nasogastric tube as prescribed

4. Provide food and fluid as prescribed

5. Observe and report

    a. Abdominal discomfort or distention

    b. Flatus

    c. Bladder distention

B. Vaginal

1. Observe for urinary retention and abdominal distention

    (NOTE: If the patient does not have an indwelling catheter, assist with efforts to urinate before she has discomfort from bladder distention.)

2. Catheterize as prescribed

3. Do not elevate the knees either on pillows or by raising the knee rest of the bed

    (NOTE: Patients undergoing pelvic surgery are more apt to have circulatory problems in the legs due to trauma to the blood vessels in the lower abdomen and pelvis.)

4. Observe and report any unusual vaginal discharge

    (NOTE: Slight vaginal drainage will usually occur for a few days.)

PREOPERATIVE AND POSTOPERATIVE CARE
UNIT VII

ASSIGNMENT SHEET #1--DETERMINE NURSING RESPONSIBILITY

These are the preoperative and postoperative orders for Mrs. D. J., who was admitted at 3 p.m. for an abdominal hysterectomy. Determine the nursing responsibilities for each order and the shift responsible for carrying them out; then complete the charts on the following pages.

April 10, 1975

1. Routine lab
2. Routine chest x-ray
3. NPO after midnight
4. Surgical prep and permit
5. Enemas until clear
6. $KMnO_4$ douche
7. $\left.\begin{array}{l}\text{Demerol 75 mg}\\ \text{Atropine gr 1/150}\\ \text{Vistaril 25 mg}\end{array}\right\}$ IM at 7:15 a.m.
8. Carbital $\dot{\bar{\text{i}}}$ po, at HS
9. Retention catheter prior to pre-op medication

April 11, 1975 11:45 a.m.

1. NPO until fully awake and then surgical liquids
2. Whole blood, $\dot{\bar{\text{i}}}$ unit in RR
3. $\left.\begin{array}{l}\text{Demerol 75 mg}\\ \text{Atarax 25-50 mg}\end{array}\right\}$ IM $\bar{q}$ 3-4 hr PRN pain
4. Keep IV open with Normosol M
5. CBC in a.m.

ASSIGNMENT SHEET #1

6. Blow bottles tid
7. Dangle this p.m. and up as tol tomorrow

April 11, 1975 6:00 p.m.

1. Remove catheter
2. D.C. IV
3. Up to BR to urinate

April 12, 1975

1. Full liquid diet as tol
2. Demerol 50 mgm "O" q4h PRN pain
3. Ambulate as tol

N II - 287-B

ASSIGNMENT SHEET #1

Preoperative orders:

Nursing responsibility by shifts:

Prior to day of surgery:

7 - 3

3 - 11

11 - 7

Day of surgery:
7 - 3

ASSIGNMENT SHEET #1

Postoperative orders:

Nursing responsibility by shifts:

Day of surgery:

7 - 3

3 - 11

11 - 7

First postoperative day:

7 - 3

3 - 11

11 - 7

PREOPERATIVE AND POSTOPERATIVE CARE
UNIT VII

ASSIGNMENT SHEET #2--WRITE A CARE STUDY

Select a surgical patient you have cared for or observed. Using the nursing care record provided, write the preoperative and postoperative orders. Determine what the nursing responsibilities were for each order and which shift carried them out.

290-B

ASSIGNMENT SHEET #2

NURSING CARE RECORD

Patient ________ (Initials only) Diagnosis ____________________ Age ________ Sex ________ Family Role ________________ Occupation ________________	Student ____________________ Date ____________________
Symptoms:	Surgery: Date:
Preoperative orders:	Nursing responsibilities:

ASSIGNMENT SHEET #2

NURSING CARE RECORD

Postoperative orders:

Recovery room care:

Nursing responsibilities after return to unit:

PREOPERATIVE AND POSTOPERATIVE CARE
UNIT VII

TEST

1. Match the terms on the right to the correct definition.

_____a. Containing both serum and blood

_____b. Prefix signifying *before*

_____c. Swelling of the tissues due to collection of fluid and characterized by preservation for a short time of indentations on the skin made by pressing with the fingers

_____d. Marred or scarred appearance

_____e. Loss of sensation over the entire body

_____f. Pertaining to an area or part

_____g. Inflammation of a vein associated with thrombosis

_____h. Depressed condition of many of the body functions due to failure of enough blood to circulate through the body following injury

_____i. Round, depressed cicatrix in the median line of the abdomen marking the site of the opening that gave passage to the blood vessels in fetal life; the navel

_____j. Prefix denoting *after* or *behind*

_____k. Loss of sensation with or without unconsciousness

_____l. Room or area with special equipment for the care of a patient immediately following surgery

_____m. Fibrous connective tissue which follows the healing of a wound; a scar

_____n. Loss of sensation in a small area

_____o. Pertaining to or containing blood

_____p. Artificial replacement or enhancement of a body part

1. Cicatrix
2. Umbilicus
3. Pre-
4. Shock
5. Anesthesia
6. Disfigurement
7. Regional
8. Local anesthesia
9. Recovery room
10. Sanguinous
11. Serosanguinous
12. Post-
13. Thrombophlebitis
14. Pitting edema
15. Prosthesis
16. General anesthesia

2. Discuss the procedures performed prior to surgery.
   a. Preoperative teaching
   b. Care of valuables
   c. Patient records
   d. Reasons for postponement of surgery
   e. Preoperative orders
   f. Physical examination
   g. Preparation of bed and unit after patient is transferred to surgery
   h. Permission for surgery

i. Personal care

3. List four fears or anxieties which the patient facing surgery may have.

   a.

   b.

   c.

   d.

4. Discuss the nurse's responsibilities concerning the patient's fears.

5. List types of anesthesia and two aids to anesthesia.

   a. General anesthesia

      1)

      2)

      3)

   b. Regional anesthesia

      1)

      2)

      3)

c. Hypothermia

1)

2)

d. Aids to anesthesia

1)

2)

6. Discuss nursing responsibilities in the immediate postoperative period.

7. Discuss nursing responsibilities after the patient returns to the unit.

8. List symptoms and nursing responsibilities in postoperative complications.

   a. Hemorrhage

      1) Symptoms

      2) Nursing responsibilities

   b. Hypostatic pneumonia

      1) Symptoms

      2) Nursing responsibilities

   c. Wound infection

      1) Symptoms

      2) Nursing responsibilities

d. Shock

  1) Symptoms

  2) Nursing responsibilities

e. Gastrointestinal disturbances

  1) Symptoms

  2) Nursing responsibilities

f. Infiltration of intravenous infusion

  1) Symptoms

2) Nursing responsibilities

g. Thrombophlebitis

1) Symptoms

2) Nursing responsibilities

9. Describe nursing responsibilities for a patient following abdominal and vaginal surgery.

a. Abdominal

b. Vaginal

10. Demonstrate the ability to determine nursing responsibility.

11. Write a care study.

(NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

PREOPERATIVE AND POSTOPERATIVE CARE
UNIT VII

ANSWERS TO TEST

1.
   a. 11
   b. 3
   c. 14
   d. 6
   e. 16
   f. 7
   g. 13
   h. 4
   i. 2
   j. 12
   k. 5
   l. 9
   m. 1
   n. 8
   o. 10
   p. 15

2. Discussion should include:
   a. Preoperative teaching--Prepares patient and family physically and emotionally for postoperative procedures and results
   b. Care of valuables
      1) Place in safekeeping
      2) Entrust to family if requested
      3) Do not leave unattended at bedside
      4) Record disposition
   c. Patient records
      1) Complete and accurate nurses' notes
      2) Signed surgery permit
      3) Recent laboratory and x-ray reports
      4) Complete and signed preoperative check list
   d. Reasons for postponement of surgery
      1) Abnormal vital signs such as temperature elevation
      2) Upper respiratory infection
      3) Extreme anxiety
      4) Abnormal laboratory findings

e. Preoperative orders

  1) Preparation of site
  2) Medications
  3) Treatments
  4) Diagnostic tests
  5) Food and fluids

f. Physical examination--Usually performed after admission to the hospital but may be done in the physician's office

g. Preparation of bed and unit after patient is transferred to surgery

  1) Prepare surgical bed
  2) Arrange furniture so patient can be transferred easily
  3) Provide emesis basin, tissues, sphygmomanometer, stethoscope, tongue depressor, paper and pen, suction equipment, and oxygen equipment

h. Permission for surgery

  1) Signed permit is required for all persons who are to have surgery
  2) Permit must be signed by the patient, next of kin, or guardian before preoperative medication is given
  3) Signature must be witnessed by a competent person other than a family member
  4) Refusal to sign permit must be reported to the charge nurse and physician

i. Personal care

  1) Identification
  2) Bath
  3) Clean hospital gown
  4) Mouth care
  5) Urination
  6) Removal of nail polish, makeup, jewelry, undergarments, and any prosthesis

3. Any four of the following:

   a. Temporary loss of independence

   b. Pain

   c. Anesthesia and/or unconsciousness

   d. Disability or changes in life style

   e. Disfigurement

   f. Separation from family or friends

   g. The unknown

4. Discussion should include:

   a. Describe procedures to patient and family as necessary

   b. Give reasons for tests and procedures

   c. Inform patient of hospital routine

   d. Describe parenteral administrations or other procedures which are usually a part of postoperative care and treatment

   e. Explain importance of breathing exercises and respiratory therapy

   f. Provide opportunity for patient to ask questions or express his fears and anxieties

   g. Reassure the family as necessary

   h. Notify physician of patient's fears and concerns; nursing personnel usually do not answer questions concerning diagnosis or prognosis

5. a. General anesthesia

      1) Inhalation

      2) Intravenous

      3) Rectal

   b. Regional

      1) Local

      2) Spinal

      3) Caudal

c. Hypothermia
    1) Local or regional
    2) General
d. Aids to anesthesia
    1) Muscle relaxant
    2) Tranquilizer

6. Discussion should include:
    a. Transfer patient from surgical stretcher to recovery bed as smoothly and quickly as possible
    b. Provide for safety
    c. Position patient for ease of breathing
    d. Check the physician's and anesthetist's orders concerning
        1) Oxygen
        2) Drainage tubes
        3) Medications
        4) Parenteral fluids
        5) Suctioning
    e. Observe as soon as possible and record
        1) Vital signs
        2) Color
        3) Dressings
        4) Level of consciousness
    f. Monitor at prescribed intervals
        1) Vital signs
        2) Color
        3) Dressings for drainage
        4) Drainage tubes

        5) Parenteral fluids
        6) Need for suctioning
        7) Level of consciousness
        8) Pain or discomfort

7. Discussion should include:
    a. Obtain report from recovery room staff prior to patient's return concerning special equipment which will be needed
    b. Assist in transferring patient to his bed
    c. Connect oxygen and/or drainage as necessary
    d. Put up side rails
    e. Receive report and patient record from recovery room nurse
    f. Observe as soon as possible and compare with those on record
        1) Vital signs
        2) Dressings for drainage
        3) Drainage tubes
        4) Parenteral fluids
        5) Need for suctioning
        6) Level of consciousness
    g. Carry out any other orders
    h. Notify family that patient has returned
    i. Monitor parenteral fluids, intake and output, oxygen, and vital signs at regular intervals
    j. Observe intake and output
    k. Assist the patient if he vomits
    l. Provide more or less cover as needed for warmth and comfort
    m. Reinforce dressings as needed; physician's order is required before changing dressings
    n. Position as prescribed

- o. Assist with breathing and coughing exercises
- p. Assist with movement and ambulation to
  - 1) Increase circulation
  - 2) Prevent distention
  - 3) Induce urination
- q. Observe, report, and record any unusual symptoms

8. a. Hemorrhage
  - 1) Symptoms
    - a) Excessive sanguinous or serosanguinous drainage
    - b) Bloody drainage from suction or drainage apparatus
    - c) Hematemesis
    - d) Symptoms of shock
  - 2) Nursing responsibilities
    - a) Report symptoms immediately to charge nurse or physician
    - b) Apply pressure on site of hemorrhage or pressure point if appropriate
    - c) Keep patient quiet
    - d) Position patient in either recumbent position or with extremities elevated to increase blood supply to head unless contraindicated
    - e) Provide for warmth as necessary
    - f) Prepare for administration of parenteral fluids or blood transfusion
    - g) Monitor vital signs

   b. Hypostatic pneumonia
  - 1) Symptoms
    - a) Slight temperature elevation
    - b) Increased pulse rate
    - c) Rapid, shallow respirations
    - d) Slight cough

2) Nursing responsibilities

   a) Turn frequently

   b) Observe character of respirations

   c) Encourage deep breathing and coughing exercises

   d) Maintain correct posture to allow for adequate expansion of the lungs

   e) Assist patient in using blow bottles or other respiratory aids

c. Wound infection

1) Symptoms

   a) Temperature elevation

   b) Increased pulse rate

   c) Pain, tenderness, or swelling at wound site

   d) Redness or inflammation of wound site

   e) Foul smelling, purulent drainage

2) Nursing responsibilities

   a) Maintain aseptic technique

      (1) Wash hands frequently

      (2) Keep patient and dressings clean and dry

      (3) Disinfect equipment

   b) Encourage adequate food and fluid intake

   c) Provide for adequate rest and sleep

   d) Assist with exercises and activity

   e) Administer antibiotics as prescribed

d. Shock

1) Symptoms

   a) Drop in blood pressure

   b) Rapid, weak pulse

        c) Rapid, shallow respirations
        d) Cool, moist skin
        e) Below normal temperature
        f) Pallor or cyanosis, particularly lips and nails
        g) Restlessness and anxiety
        h) Thirst
        i) Nausea and vomiting
        j) Loss of consciousness
    2) Nursing responsibilities
        a) Report symptoms to charge nurse or physician immediately
        b) Elevate foot of bed unless contraindicated
        c) Keep patient only warm enough to prevent heat loss
        d) Restrict fluids and foods until physician checks patient
        e) Check vital signs at regular intervals
        f) Administer oxygen as indicated
        g) Prepare for administration of parenteral fluids
        h) Keep patient quiet and in recumbent position
e. Gastrointestinal disturbances
    1) Symptoms
        a) Abdominal distention
        b) Gas pains
        c) Pain or cramping in abdomen
        d) Nausea and vomiting
        e) Dryness of mouth
        f) Constipation

2) Nursing responsibilities
   - a) Provide rest for gastrointestinal tract by restricting food and fluid intake immediately before and after surgery
   - b) Avoid cold and high glucose beverages which may cause gas
   - c) Change position frequently
   - d) Ambulate unless contraindicated
   - e) Insert rectal tube as prescribed
   - f) Keep patient quiet to decrease vomiting
   - g) Provide mouth care frequently

f. Infiltration of intravenous infusion

1) Symptoms
   - a) Area around needle becomes firm, cold, and pale
   - b) Patient complains of pain or numbness in affected areas
   - c) Blood fails to return in the tubing when the bottle of fluid is lowered below the level of the needle
   - d) Pitting edema may be noticed

2) Nursing responsibilities
   - a) Observe administration site frequently
   - b) Immobilize site of administration
   - c) Explain necessity of immobilization
   - d) Restrain affected limb as needed
   - e) Remain with patient as necessary to maintain immobility

g. Thrombophlebitis

1) Symptoms
   - a) Pain or cramp in the calf of the leg
   - b) Redness
   - c) Swelling
   - d) Temperature elevation

- e) Fatigue
- f) Anorexia

2) Nursing responsibilities
   - a) Aid in prevention by
     - (1) Early exercise and ambulation
     - (2) Use of fitted elastic bandages
   - b) Keep leg at rest after symptoms occur
   - c) Avoid any strain or massage of the affected leg
   - d) Support leg on soft pillows as prescribed
   - e) Use cradle to carry weight of bedcovers
   - f) Administer anticoagulant as prescribed
   - g) Maintain bedrest while temperature is elevated
   - h) Increase activity as prescribed

9. Description should include:
   - a. Abdominal
     - 1) Support abdominal incision during coughing and deep breathing exercises
     - 2) Maintain prescribed position
     - 3) Maintain suction and/or drainage of nasogastric tube as prescribed
     - 4) Provide food and fluid as prescribed
     - 5) Observe and report
       - a) Abdominal discomfort or distention
       - b) Flatus
       - c) Bladder distention
   - b. Vaginal
     - 1) Observe for urinary retention and abdominal distention
     - 2) Catheterize as prescribed

    3) Do not elevate the knees either on pillows or by raising the knee rest of the bed

    4) Observe and report any unusual vaginal discharge

10. Evaluated to the satisfaction of the instructor.

11. Evaluated to the satisfaction of the instructor.

TERMINAL AND POSTMORTEM CARE
UNIT VIII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to discuss suggestions for health workers in caring for the terminally ill, nursing responsibilities, and needs of the patient's family. The student should be able to list the responsibilities of the nurse at the time of death and describe the care of the patient's body and record. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with terminal and after-death care to the correct definitions.
2. Discuss suggestions for preparing the health worker to care for the terminally ill.
3. List ten signs of approaching death.
4. Discuss nursing responsibilities in caring for the terminally ill.
5. Discuss the needs of the patient's family.
6. List six nursing responsibilities at the death of a patient.
7. Describe the care of the body after death.
8. Describe closing the patient's record.
9. Demonstrate the ability to give postmortem care.

TERMINAL AND POSTMORTEM CARE
UNIT VIII

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information sheet.

   C. Discuss terminal and specific objectives.

   D. Discuss information sheet.

   E. Demonstrate through role-play the procedures for terminal and postmortem care.

   F. Arrange for a physician to discuss what he would want reported to him and how nursing personnel could handle the questions which terminally ill patients or their families may ask.

   G. Invite a mortician to discuss postmortem care and procedures with the students.

   H. Ask a clergyman to discuss grief with the students.

   I. Discuss the legal responsibilities of the nurse after the death of a patient.

   J. Demonstrate and discuss the procedure outlined on the job sheet.

   K. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Demonstrate the ability to accomplish the procedure outlined on the job sheet.

   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Job Sheet #1--Give Postmortem Care

   D. Test

   E. Answers to test

II. References:

   A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

   B. Harmer, Bertha, and Virginia Henderson. *Textbook of the Principles and Practice of Nursing.* New York: The Macmillan Company, 1967.

   C. Kubler-Ross, Elizabeth. *On Death and Dying.* New York: The Macmillan Publishing Company, 1969.

   D. Noonan, Karen Ann. *Emotional Adjustment to Illness.* Albany, New York: Delmar Publishers, 1975.

   E. Thompson, Ella M., and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

   F. Westberg, Granger E. *Good Grief.* Philadelphia, Pennsylvania: Fortress Press, 1971.

III. Other materials:

   A. Filmstrips

      1. "Care of the Patient with Terminal Cancer." Trainex Corporation.

      2. "Care of the Dying Patient." Trainex Corporation.

      3. "Perspectives on Dying." Concept Media.

   B. Periodicals

      1. *The Journal of Practical Nursing*

         a. Welch, Deborah. "Unforgettable Experience on First Encountering Death." March 1974.

b. Barnsteiner, Jane H. "Death and Dying: Anxieties, Needs, and Responsibilities of the Nurse." June 1974.

c. Fox, Nancy L. "A Good Birth - A Good Life - Why Not a Good Death." October 1974.

d. Berry, Reginald. "Is Death Our Failure?" November 1974.

e. Myers, Samuel. "Effects of Death on the Living." January 1975.

f. Whitney, Jane A. "Dying." (Poetry) February 1975.

2. *Nursing Care*

a. Hoevet, Sister Martha. "Dying Is Also Living." July 1974.

b. Welnick, Jacquelyn. "Are We Scaring Our Patients to Death?" July 1974.

3. *Nursing '74 and '75*

a. Chura, Victoria. "Sarah Wanted to Die at Home. But Her Family Resisted." July 1974.

b. Ryan, Mary Ann. "Helping the Family Cope with a Cardiac Arrest." August 1974.

c. Bloomfield, Karen J. "Johnny Is My Most Difficult and Dearest Patient." October 1974.

d. Popoff, David. "What Are Your Feelings About Death?" (Questionnaire) November 1974.

e. Luckman, Joan, and Karen C. Sorenson. "What Patients' Actions Tell You About Their Feelings, Fears, and Needs." February 1975.

f. Rinear, Eileen. "Helping the Survivors of Expected Death." March 1975.

4. *RN*

a. Gruendemann, Barbara J. "Hospital Chaplain: The 'Now' Member of the Health Team." October 1973.

b. Fleming, Ruth P. "Good Physical Care: Priority for the Dying." April 1974.

5. Whitman, Helen H., and Shelby J. Lukes. "Behavior Modification for Terminally Ill Patients." *American Journal of Nursing*, January 1975.

American Cancer Society. *Cancer Bulletin*. November-December 1974.

(NOTE: All of the articles in this issue are concerned with some aspect of terminal illness or death.)

TERMINAL AND POSTMORTEM CARE
UNIT VIII

INFORMATION SHEET

I. Terms and definitions

   A. Death--Cessation of life beyond the possibility of resuscitation

   B. Terminal--Pertaining to the end

   C. Postmortem--After death

   D. Autopsy--Examination of the body after death; postmortem examination

   E. Deceased--Dead person

   F. Shroud--Sheet of muslin or plastic film used to wrap the body of the deceased

   G. Mortician--Undertaker; funeral director

   H. Expire--To breathe one's last breath; to die

   I. Mortuary--Funeral home; place where bodies are kept until burial

   J. Morgue--Place where bodies are kept until released to mortuary for burial

II. Suggestions for preparing the health worker to care for the terminally ill

   A. No rules can be set down for the health worker's behavior with the dying patient; no two persons or situations are exactly alike

   B. Encountering death may be a distressing or devastating experience even for health team members

   C. Reading of the experiences of others and participating in discussions concerning terminal illness and dying enables health workers to function more effectively

   D. Nursing skills can be used to lessen the physical and emotional discomfort of the patient and his family

   E. Before health workers can help a patient and the family cope with dying, they must face their own feelings concerning death

INFORMATION SHEET

F. The culture of the community or country influences one's beliefs about dying and death

(NOTE: Unfortunately, the United States is very youth-oriented and the concern about aging and death are avoided as much as possible. In other cultures, however, dying and death are accepted as a natural part of life and one is expected to express grief at the death of a loved one.)

G. The terminally ill need attention and care as much or more than other patients; take time to listen to him and by your attitude assure him that you do care

III. Common signs of approaching death

A. General slowing of the circulation with the feet and then the hands, ears, and nose becoming cold to the touch

B. Excessive perspiration over the body

C. Mottled skin

D. Irregular respirations

E. Gradual relaxation of muscle tone with apparent sagging of tissues

F. Gradual weakening and disappearance of reflexes

G. Restlessness

H. Gradual or sudden loss of ability to respond vocally

I. Failure of pupils to react to light

J. Gradual decrease of ability to swallow, with subsequent collection of secretions in mouth and upper respiratory tract which may cause noisy breathing called death rales

K. Gradual or sudden loss of consciousness or response to stimuli

L. Cessation of breathing

M. Cessation of cardiac function with loss of pulse and heart sounds

IV. Nursing responsibilities in caring for the terminally ill

A. Physical

1. Keep patient clean and dry

INFORMATION SHEET

2. Give food and fluids as tolerated or as desired by the patient

3. Position patient for comfort and ease of breathing

   (NOTE: Side-lying position may be advantageous if the patient's ability to swallow is impaired. Elevate the head of the bed as needed to ease breathing.)

4. Support position as needed with pillows or folded blankets

5. Provide sufficient light cover as needed for warmth or as patient desires

   (NOTE: Although the patient's extremities may be cool to the touch, the patient may say he is too warm.)

6. Provide mouth care frequently

7. Change position frequently

8. Offer bedpan or urinal to the patient as long as he is responsive

B. Emotional

1. Stay with the patient or check him frequently

   (NOTE: Health care personnel have a tendency to withdraw from the terminal patient and his family.)

2. Take time to listen to the patient

3. Say nothing within the patient's hearing that you would not want him to hear

   (NOTE: It is probable that a patient can hear although he may be unable to speak or move.)

4. Avoid whispering

5. Speak distinctly to the patient and explain procedures even when you are not sure he can hear

C. Spiritual

1. Notify the chaplain as requested

2. Provide privacy for the patient and clergyman

INFORMATION SHEET

3. Read the Bible or pray with the patient only if requested to do so and a minister or clergyman is not available

4. Respect and provide for the patient's religious beliefs and practices even though they may differ from yours

D. Environmental

1. Provide adequate lighting; avoid bright lights

2. Provide adequate circulation of air; use room deodorants as needed

3. Keep room or unit neat and tidy

4. Move patient to private room if possible

(NOTE: In some institutions, terminally ill patients are placed in a room with no other patients. If a private room is not available, a measure of privacy can be provided by use of screens or curtains to separate the terminal patient from others.)

V. Needs of the patient's family

A. Provide privacy for them

B. Provide emotional support for the family; make them aware of your concern and sympathy to help them cope with a distressful situation

C. Provide for their comfort

D. Provide time for the family to be alone with patient

E. Notify the family of a change in the patient's condition

VI. Nursing responsibilities at the death of a patient

A. Patient

1. Note time respirations cease

2. Note time that pulse ceases

3. Check heartbeat with stethoscope

4. Notify charge nurse and/or physician or his representative

5. Do not remove the body from the unit until death has been certified by the physician or his representative

INFORMATION SHEET

- B. Family
  - 1. Allow time to be with the deceased
  - 2. Provide a private area for the family to be together
  - 3. Provide emotional support

VII. Care of body after death

- A. Clean the body as required
  - 1. Remove tubes and catheters according to institutional policy
  - 2. Provide clean dressings
  - 3. Bathe as needed; remove any tape marks
- B. Position body
  - 1. Place in supine position with bed flat
  - 2. Close eyes gently
  - 3. Elevate head on one pillow
  - 4. Place arms at sides
  - 5. Replace dentures or place them in labeled container for mortuary
  - 6. Use folded or rolled towel as necessary to keep chin in natural position
  - 7. Avoid tight bandages to hold chin or arms in place as they may discolor the skin
- C. Leave wedding ring on the patient; secure it with a strip of bandage and note on patient's record
- D. Remove other jewelry; list and place in a package with other valuables
- E. Place protective pads under patient to absorb any urine or fecal discharge
- F. Leave identification on body
- G. Wrap body in a shroud
- H. Attach identification tag to the outside of the shroud
- I. Care for and list all clothing and belongings according to institutional policies

INFORMATION SHEET

VIII. Closing the patient's record

A. Keep patient's chart current throughout care

B. Record time at which pulse and respirations cease and name of person who certifies death

C. Record disposition of patient's belongings

D. Complete patient record as required by institutional policies

TERMINAL AND POSTMORTEM CARE
UNIT VIII

JOB SHEET #1--GIVE POSTMORTEM CARE

I. Equipment

   A. Morgue pack containing

      1. Identification tags

      2. Shroud

      3. Roller bandage

   B. Bath equipment

   C. Bed protector

   D. Dressings as needed

II. Procedure

   A. Provide privacy; always place screen or curtain between deceased and other patients

   B. Allow relatives to remain with the patient for a short time if they desire

   C. Arrange body in flat or nearly flat, supine position

   D. Place one pillow under patient's head

   E. Close patient's eyelids; cover with moistened cotton balls if necessary to keep them closed

   F. Replace dentures in patient's mouth or place them in a labeled container to be given to mortuary

   G. Wait until physician pronounces patient dead before completing procedure

   H. Assemble equipment needed for care

   I. Remove catheter, intravenous equipment, or other appliances

   J. Bathe body as needed; remove any tape marks

   K. Replace dressings; secure as needed

      (NOTE: Dressings need not be sterile.)

   L. Place rolled towel under chin as needed

JOB SHEET #1

M. Attach identification tag to toe or wrist according to institutional policy

N. Wrap body in shroud

O. Attach identification tag to outside of shroud

P. Place all valuables in bag provided; label bag

Q. Assemble patient's clothing and belongings

R. Place wrapped body on stretcher and transport to morgue if mortuary representative will not be coming in a reasonable length of time

S. Give patient's effects to the relatives or to the mortuary representative; obtain signed receipt

T. Strip room after removal of body and personal effects; clean as usual

TERMINAL AND POSTMORTEM CARE
UNIT VIII

TEST

1. Match the terms on the right to the correct definition.

_____a. Sheet of muslin or plastic film used to wrap the body of the deceased

_____b. Pertaining to the end

_____c. Place where bodies are kept until released to mortuary for burial

_____d. After death

_____e. Undertaker; funeral director

_____f. Examination of the body after death; postmortem examination

_____g. Funeral home; place where bodies are kept until burial

_____h. Cessation of life beyond the possibility of resuscitation

_____i. Dead person

_____j. To breathe one's last breath; to die

1. Autopsy
2. Postmortem
3. Deceased
4. Mortuary
5. Expire
6. Shroud
7. Death
8. Mortician
9. Morgue
10. Terminal

2. Discuss suggestions for preparing the health worker to care for the terminally ill.

3. List ten signs of approaching death.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

   i.

   j.

4. Discuss nursing responsibilities in caring for the terminally ill.

   a. Spiritual

   b. Physical

c. Environmental

d. Emotional

5. Discuss the needs of the patient's family.

6. List six nursing responsibilities at the death of a patient.

a.

b.

c.

d.

e.

f.

7. Describe the care of the body after death.

8. Describe closing the patient's record.

9. Demonstrate the ability to give postmortem care.

(NOTE: If this has not been accomplished prior to the test, ask the instructor when the above activity should be completed.)

TERMINAL AND POSTMORTEM CARE
UNIT VIII

ANSWERS TO TEST

1. a. 6
   b. 10
   c. 9
   d. 2
   e. 8
   f. 1
   g. 4
   h. 7
   i. 3
   j. 5

2. Discussion should include:

   a. No rules can be set down for the health worker's behavior with the dying patient; no two persons or situations are exactly alike

   b. Encountering death may be a distressing or devastating experience even for health team members

   c. Reading of the experiences of others and participating in discussions concerning terminal illness and dying enables health workers to function more effectively

   d. Nursing skills can be used to lessen the physical and emotional discomfort of the patient and his family

   e. Before health workers can help a patient and the family cope with dying, they must face their own feelings concerning death

   f. The culture of the community or country influences one's beliefs about dying and death

   g. The terminally ill need attention and care as much or more than other patients; take time to listen to him and by your attitude assure him that you do care

3. Any ten of the following:

   a. General slowing of the circulation with the feet and then the hands, ears, and nose becoming cold to the touch

   b. Excessive perspiration over the body

   c. Mottled skin

   d. Irregular respirations

e. Gradual relaxation of muscle tone with apparent sagging of tissues

f. Gradual weakening and disappearance of reflexes

g. Restlessness

h. Gradual or sudden loss of ability to respond vocally

i. Failure of pupils to react to light

j. Gradual decrease of ability to swallow, with subsequent collection of secretions in mouth and upper respiratory tract which may cause noisy breathing called death rales

k. Gradual or sudden loss of consciousness or response to stimuli

l. Cessation of breathing

m. Cessation of cardiac function with loss of pulse and heart sounds

4. Discussion should include:

a. Spiritual

1) Notify the chaplain as requested

2) Provide privacy for patient and clergyman

3) Read the Bible or pray with the patient only if requested to do so and a minister or clergyman is not available

4) Respect and provide for the patient's religious beliefs and practices even though they may differ from yours

b. Physical

1) Keep patient clean and dry

2) Give food and fluids as tolerated or as desired by patient

3) Position patient for comfort and ease of breathing

4) Support position as needed with pillows or folded blankets

5) Provide sufficient light cover as needed for warmth or as patient desires

6) Provide mouth care frequently

7) Change position frequently

8) Offer bedpan or urinal to the patient as long as he is responsive

c. Environmental

  1) Provide adequate lighting; avoid bright lights

  2) Provide adequate circulation of air; use room deodorants as needed

  3) Keep room or unit neat and tidy

  4) Move patient to private room if possible

d. Emotional

  1) Stay with the patient or check him frequently

  2) Take time to listen to the patient

  3) Say nothing within the patient's hearing that you would not want him to hear

  4) Avoid whispering

  5) Speak distinctly to the patient and explain procedures even when you are not sure he can hear

5. Discussion should include:

a. Provide privacy for them

b. Provide emotional support for the family; make them aware of your concern and sympathy to help them cope with a distressful situation

c. Provide for their comfort

d. Provide time for the family to be alone with patient

e. Notify the family of a change in the patient's condition

6. Any six of the following:

a. Patient

  1) Note time respirations cease

  2) Note time that pulse ceases

  3) Check heartbeat with stethoscope

  4) Notify charge nurse and/or physician or his representative

  5) Do not remove the body from the unit until death has been certified by the physician or his representative

b. Family

1) Allow time to be with the deceased

2) Provide a private area for the family to be together

3) Provide emotional support

7. Description should include:

a. Clean the body as required

1) Remove tubes and catheters according to institutional policy

2) Provide clean dressings

3) Bathe as needed; remove any tape marks

b. Position body

1) Place in supine position with bed flat

2) Close eyes gently

3) Elevate head on one pillow

4) Place arms at sides

5) Replace dentures or place them in labeled container for mortuary

6) Use folded or rolled towel as necessary to keep chin in natural position

7) Avoid tight bandages to hold chin or arms in place as they may discolor the skin

c. Leave wedding ring on the patient; secure it with a strip of bandage and note on patient's record

d. Remove other jewelry; list and place in a package with other valuables

e. Place protective pads under patient to absorb any urine or fecal discharge

f. Leave identification on body

g. Wrap body in a shroud

h. Attach identification tag to the outside of the shroud

i. Care for and list all clothing and belongings according to institutional policies

8. Description should include:

   a. Keep patient's chart current throughout care

   b. Record time at which pulse and respirations cease and name of person who certifies death

   c. Record disposition of patient's belongings

   d. Complete patient record as required by institutional policies

9. Performance skills evaluated to the satisfaction of the instructor.

PLANNING NURSING CARE
UNIT IX

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to discuss the development of nursing care plans and demonstrate the ability to write a nursing care plan. The student should be able to list advantages of written care plans and factors which influence the nursing care plan. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match the terms associated with this unit to the correct definition.
2. List six advantages of a written nursing care plan.
3. List four factors which influence the nursing care plan.
4. Discuss the development of a nursing care plan.
5. Demonstrate the ability to write a nursing care plan.

PLANNING NURSING CARE
UNIT IX

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information and assignment sheets.

  C. Discuss terminal and specific objectives.

  D. Discuss information and assignment sheets.

  E. Provide samples of nursing care plans used by your facility.

  F. Assist with assignment sheet.

  G. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Complete assignment sheet.

  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Assignment Sheet #1--Write a Nursing Care Plan

  D. Test

  E. Answers to test

II. References:

A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

B. Harmer, Bertha, and Virginia Henderson. *Textbook of the Principles and Practice of Nursing.* New York: The Macmillan Company, 1967.

C. Fuerst, Elinor V. et al. *Fundamentals of Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1974.

D. Johnston, Dorothy F. *Total Patient Care.* St. Louis, Missouri: The C. V. Mosby Company, 1972.

E. Sutton, Audrey L. *Bedside Nursing Techniques.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

PLANNING NURSING CARE
UNIT IX

INFORMATION SHEET

I. Terms and definitions

- A. Case study--Collection of data concerning a specific patient giving the history and description of illness, nursing and medical care, and outcome of treatment
- B. Nursing care plan--Individualized plan of action based upon an assessment of the patient's needs and designed to meet the specific and general objectives necessary to achieve optimum recovery
- C. Ancillary--Auxiliary or supplementary; providing help
- D. Objective--Aim or goal toward which effort is directed
- E. Nutritionist--Specialist in the study of nutrition
- F. Cholecystitis--Inflammation of the gallbladder

II. Advantages of a written nursing care plan

- A. Identifies patient needs
- B. Specifies nursing actions to meet the needs of the individual patient
- C. Provides specific directions and guidelines for nursing personnel
- D. Provides for continuity of care
- E. Permits more efficient use of time
- F. Provides greater security for the patient because his preferences and reactions are used as guides for his care
- G. Reflects concern for the patient as an individual
- H. Provides opportunity for instruction and preparation before dismissal for care at home

III. Factors which influence the nursing care plan

- A. Patient's age and state of dependency
- B. Type and severity of illness
- C. Physical facilities of the health care unit

INFORMATION SHEET

   D. Type and amount of care delegated to other departments

   E. Nursing personnel available

   F. Method of assigning personnel

IV. Development of a nursing care plan

   A. Gather and assess information

      1. Acquaint all personnel involved with the proper use of the nursing care plan

      2. Provide adequate time for collecting and utilizing data

      3. Observe and/or interview the patient and his family to determine

         a. Personal data--Age, sex, religion, marital status, occupation

         b. Cultural and economic influence

         c. Physical condition and ability

         d. Mental status including reaction to illness

      4. Collect and assess data obtained by other team members

         (NOTE: Often the patient will relate better to the ancillary worker.)

      5. Physician's orders

      6. Vital signs

      7. Results of diagnostic tests

   B. Determine and write objectives of nursing care

      1. Objectives must be specific and obtainable

         (NOTE: "To assist patient to recover following surgery" is a general objective. "Relieve nausea," "Control pain," "Provide movement at prescribed intervals" are specific objectives.)

INFORMATION SHEET

2. Nursing action is not an objective but rather the means of accomplishing an objective

   (NOTE: The objective is a goal or reason for nursing action; the nursing action is what to do to reach the objective.)

3. Both medical and nursing objectives may be included in the nursing care plan

   (NOTE: Hardly anything is done to, for, or with the patient which does not have implications for the nursing staff. Some objectives may be primarily of a nursing nature but may require supporting activities of the other members of the health team. An example is keeping the skin intact, which is a nursing responsibility. The assistance of the physician, nutritionist, and physical therapist may be needed to adequately fulfill this responsibility.)

C. Determine and write nursing actions to accomplish each objective

1. Make nursing action specific and direct

   (NOTE: "Encourage fluid intake" is a guide often found on patient records. A more specific nursing action would include type, amount, and individual preferences. For example, "Give 100 cc of fluid each hour; prefers fruit juice, no milk" would be better form.)

2. Indicate specific preferences, reactions, or complaints of the patient

   (NOTE: The patient's cooperation is essential to his successful recovery and most patients will be more cooperative if they have something to say about the therapy they will be receiving. However, objectives which are unacceptable to the patient may have to be included to achieve the ultimate goal.)

3. Review plan with the nursing team to be sure all pertinent information and actions are included and understood

D. Evaluate and revise the nursing plan

1. Write in pencil and change as needed to keep plans current and applicable

   (NOTE: The nursing care plan is not a legal document.)

2. Modify objectives and nursing actions as necessary to

   a. Achieve desired results

   b. Make them acceptable to the patient

   c. Reflect changes or improvements in the patient's conditions

3. Plan for and instruct the patient and his family for continued nursing service after discharge from the health care facility

PLANNING NURSING CARE
UNIT IX

ASSIGNMENT SHEET #1--WRITE A NURSING CARE PLAN

Use the sample nursing care plan provided in this unit to write a plan of care for the patient described below.

> Mr. B.A. was admitted with chronic cholecystitis on April 21, 1975, and was discharged on April 30, 1975. A cholecystectomy was performed on April 22. On admission, he was in good condition with no apparent physical disabilities other than discomfort from the chronic cholecystitis. He has no known allergies but has difficulty tolerating fatty or spicy food. He has a full set of dentures and wears glasses. He has normal hearing in his left ear but is deaf in his right ear due to a childhood accident. He has no history of heart trouble or respiratory difficulty but does smoke about one-half package of cigarettes per day.
>
> His previous illnesses included the usual childhood diseases and pneumonia following influenza when he was a teenager. He has had two previous surgeries, a tonsillectomy at the age of eight and an emergency appendectomy during his service in the navy. He does not recall the exact dates of the operations. He is 56 years old, is married, and has two sons and one daughter, all of whom are married. He works on an oil rig for a petroleum company. He is a member of the Baptist church and has been a Boy Scout leader.

Preoperative orders
April 21, 1975

1. Liquid diet tonight
2. Clipper prep of surgical area
3. Surgical permit for cholecystectomy
4. Adrenosem amp ī IM
5. S. S. enema
6. Force fluids this p.m.
7. Dalmane 30 mg ī po at h.s.
8. NPO after 2 a.m.
9. Phenergan 25 mg IM at 7 a.m.
10. Demeral 100 mg } IM at 7:20 a.m.
    Atropine gr 1/150 }

ASSIGNMENT SHEET #1

Postoperative orders
April 22, 1975 11:00 a.m.

1. Demerol 50 - 75 mg IM PRN pain
2. Vistaril 25 mg IM PRN nausea
3. Wycillin 600,000 U IM q̄ 24 hr
4. Sips of water only today
5. Continuous IV

   1000 cc D5W c̄ Solu B c̄ C q̄ 8 hr

   Follow with 1000 cc 5% glucose in Normosol M q̄ 8 hr

   Add Solu B c̄ C to q̄ other IV
6. Dangle tonight and then tid
7. Encourage turning and moving
8. In a.m. begin Modane Mild † po at noon meal
   Beminal 500 † po at noon meal

April 22, 1975 4 p.m.

1. Demerol 50 mg tabs † PRN pain
2. Full liquids tonight

April 23, 1975 8:15 a.m.

1. Slush enema (Harris flush)
2. Colon tube
3. Very soft diet tomorrow
4. Sit in chair today
5. CBC in a.m.

ASSIGNMENT SHEET #1

April 23, 1975 4 p.m.

1. $\left.\begin{array}{l}\text{Demerol 75 mg}\\ \text{Vistaril 25 mg}\end{array}\right\}$ IM $\bar{q}$ 8 hr
2. Enema in early a.m.
3. Call me if vomiting

April 23, 1975 10 p.m.

1. Insert NG tube if patient vomits again

(NOTE: Postoperative complications had developed because the patient refused to take pain medication and began to develop ileus, an acute intestinal obstruction characterized by diminished peristalsis, distention, abdominal pain, and vomiting. Demerol was started on a regular basis.)

April 24, 1975 8:45 a.m.

1. $\left.\begin{array}{l}\text{Demerol 50 mg}\\ \text{Vistaril 50 mg}\end{array}\right\}$ IM $\bar{q}$ 8 hr
2. Sit in chair for meals
3. Mineral oil ℥i this p.m.
4. DC IV after present infusion
5. Full liquids
6. Very soft diet this evening

April 24, 1975 5 p.m.

1. NG tube to Gomco low suction continuously

April 25, 1975 9 a.m.

1. Mineral oil ℥i $\bar{q}$ 8 hr now
2. Clamp Ng tube for 1 1/2 hr; then release for 1 1/2 hr
3. 1000 cc Normosol M $\bar{c}$ Solu B $\bar{c}$ C IV

ASSIGNMENT SHEET #1

April 25, 1975 4:30 p.m.

1. S. S. enema tonight
2. Clamp off NG tube for 1 hr; then on 1 hr
3. 1000 cc Normasol M $\bar{c}$ Solu B $\bar{c}$ C IV in a.m.

April 26, 1975

1. Discontinue Gomco
2. Remove NG tube
3. Full liquid and very soft diet

April 27, 1975

1. Tranxene 7.5 mg po qid
2. Dalmane 30 mg at po hs
3. BRP
4. Amcillin cap 250 mg qid

April 28, 1975

1. DC Demerol except PRN
2. Soft diet

April 29, 1975

1. Regular diet
2. DC mineral oil

April 30, 1975

1. Dismiss

N II - 349-B

DATE	TREATMENTS	7 - 3	3 - 11	11 - 7	STOP DATE

ORDER DATE	MEDICATION AND DOSE	TIME	STOP DATE	ORDER DATE	PRN MEDICATION AND DOSE	STOP DATE

ADM. DATE & TIME:

DIAGNOSIS:

RELIGION

DATE

OPERATION

ORDER DATE

DIET

ROOM NO.

PATIENT

AGE

PHYSICIAN

NURSING CARE PLAN

DATE	LONG RANGE GOAL		
	SHORT RANGE GOALS		
	PROBLEMS AND NEEDS	APPROACH	DATE SOLVED

350-B

PLANNING NURSING CARE
UNIT IX

TEST

1. Match the terms on the right to the correct definition.

_____a. Inflammation of the gallbladder

_____b. Aim or goal toward which effort is directed

_____c. Individualized plan of action based upon an assessment of the patient's needs and designed to meet the specific and general objectives necessary to achieve optimum recovery

_____d. Collection of data concerning a specific patient giving the history and description of illness, nursing and medical care, and outcome of treatment

_____e. Specialist in the study of nutrition

_____f. Auxiliary or supplementary; providing help

1. Case study
2. Ancillary
3. Cholecystitis
4. Nursing care plan
5. Nutritionist
6. Objective

2. List six advantages of a written nursing care plan.

a.

b.

c.

d.

e.

f.

3. List four factors which influence the nursing care plan.

a.

b.

c.

d.

4. Discuss the development of a nursing care plan.

5. Demonstrate the ability to write a nursing care plan.

(NOTE: If this has not been accomplished prior to the test, ask the instructor when the above activity should be completed.)

PLANNING NURSING CARE
UNIT IX

ANSWERS TO TEST

1. a. 3
   b. 6
   c. 4
   d. 1
   e. 5
   f. 2

2. Any six of the following:
   a. Identifies patient needs
   b. Specifies nursing actions to meet the needs of the individual patient
   c. Provides specific directions and guidelines for nursing personnel
   d. Provides for continuity of care
   e. Permits more efficient use of time
   f. Provides greater security for the patient because his preferences and reactions are used as guides for his care
   g. Reflects concern for the patient as an individual
   h. Provides opportunity for instruction and preparation before dismissal for care at home

3. Any four of the following:
   a. Patient's age and state of dependency
   b. Type and severity of illness
   c. Physical facilities of the health care unit
   d. Type and amount of care delegated to other departments
   e. Nursing personnel available
   f. Method of assigning personnel

4. Discussion should include:

   a. Gather and assess information

      1) Acquaint all personnel involved with the proper use of the nursing care plan

      2) Provide adequate time for collecting and utilizing data

      3) Observe and/or interview the patient and his family to determine

         a) Personal data--Age, sex, religion, marital status, occupation

         b) Cultural and economic influence

         c) Physical condition and ability

         d) Mental status including reaction to illness

      4) Collect and assess data obtained by other team members

      5) Physician's orders

      6) Vital signs

      7) Results of diagnostic tests

   b. Determine and write objectives of nursing care

      1) Objectives must be specific and obtainable

      2) Nursing action is not an objective but rather the means of accomplishing an objective

      3) Both medical and nursing objectives may be included in the nursing care plan

   c. Determine and write nursing actions to accomplish each objective

      1) Make nursing action specific and direct

      2) Indicate specific preferences, reactions, or complaints of the patient

      3) Review plan with the nursing team to be sure all pertinent information and actions are included and understood

d. Evaluate and revise the nursing plan

  1) Write in pencil and change as needed to keep plans current and applicable

  2) Modify objectives and nursing actions as necessary to

    a) Achieve desired results

    b) Make them acceptable to the patient

    c) Reflect changes or improvements in the patient's conditions

  3) Plan for and instruct the patient and his family for continued nursing service after discharge from the health care facility

5. Evaluated to the satisfaction of the instructor.

INTRODUCTION TO MATERNAL AND INFANT CARE
UNIT I

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to identify the parts of the pelvis and the four pelvic measurements, list the functions of the female reproductive structures, and discuss the physiology of the female reproductive system. The student should be able to discuss historical events and persons, trends in mortality rates, and changing concepts in maternity care. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with this unit to the correct definitions.
2. Discuss historical events and persons pertaining to obstetrics.
3. Discuss the current trend in maternal and infant mortality rates.
4. Discuss changing concepts in maternity care.
5. List the functions of the female reproductive structures.
6. Identify the parts of the pelvis.
7. Identify the four pelvic measurements.
8. Describe the physiology of the female reproductive system.
9. Describe the three steps in conception.

INTRODUCTION TO MATERNAL AND INFANT CARE
UNIT I

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information sheet.

   C. Discuss terminal and specific objectives.

   D. Discuss information sheet.

   E. Review anatomy and physiology using models and charts.

   F. Contact the state health department to obtain current vital statistics concerning birth rate and maternal and fetal morbidity and mortality rates.

   G. Demonstrate use of pelvimeter or caliper for pelvimetry, using a model or skeleton.

   H. Visit the obstetrical department.

   I. Discuss agencies in your community concerned with maternal and child care.

   J. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Review anatomy and physiology of the reproductive system.

   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

C. Transparency masters

1. TM 1--The Pelvis
2. TM 2--Pelvimetry: Inlet
3. TM 3--Pelvimetry: Outlet
4. TM 4--The Menstrual Cycle and Pregnancy

D. Test

E. Answers to test

II. References:

A. Bleier, Inge J. *Maternity Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1971.

B. Broadribb, Violet, and Charlotte Corliss. *Maternal-Child Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

C. Demarest, Robert J., and John J. Sciarra. *Conception, Birth and Contraception.* New York: McGraw-Hill Book Company, 1969.

D. Friesner, Arlyne, and Beverly Raff. *Obstetric Nursing.* Flushing, New York: Medical Examination Publishing Company, 1974.

E. Tuchmann-Duplessis, H., G. David, and P. Haegel. *Illustrated Human Embryology.* Embryogenesis, vol. 1. New York: Springer Verlag, Inc., 1972.

(NOTE: The book is available from Springer Verlag, Inc., 175 Fifth Avenue, New York 10010.)

III. Other materials:

A. Films

1. "Female Cycle." Films Incorporated, 1144 Wilmette Avenue, Wilmette, Illinois 60091.

   (NOTE: This film is available to Oklahoma instructors from the Curriculum and Instructional Materials Center, Oklahoma State Department of Vocational and Technical Education, 1515 West Sixth Avenue, Stillwater, Oklahoma 74074.)

2. "All My Babies." American Medical Association Film Library, c/o Association-Sterling Films, 512 Burlington Avenue, La Grange, Illinois 60525.

3. "From Generation to Generation." McGraw-Hill Films, Distribution Center, Manchester Road, Manchester, Missouri 63011.

   (NOTE: This film is available to Oklahoma instructors from the Oklahoma State Department of Health.)

B. Booklet--*Understanding*. Raritan, New Jersey: Ortho Pharmaceutical Corporation.

INTRODUCTION TO MATERNAL AND INFANT CARE
UNIT I

INFORMATION SHEET

I. Terms and definitions

  A. Midwife--Woman, trained or experienced, who attends other women in labor and delivery

  B. Parturition--Process of giving birth to young; childbirth

  C. Labor--Series of processes, especially the coordinated, periodic uterine contractions, whereby the fetus is expelled in parturition

  D. Delivery--Expulsion or extraction of a fetus and its membranes; parturition

  E. Pelvimeter--Curved, hinged instrument with adjustable arms used for measuring the pelvis

  F. Pelvimetry--Measurement of the dimensions of the pelvis

  G. Embryo--Product of conception from the moment of fertilization to the end of the eighth week after fertilization

  H. Fetus--Developing body in utero from the beginning of the ninth week after fertilization until birth

  I. Fertilization--Union of ovum and sperm

  J. Conception--Fertilization of the ovum by the spermatozoon; occurs in the human female

  K. Pregnancy--State of the woman from conception to childbirth; gestation

  L. Gravida; Gr--Woman who is pregnant; refers to a pregnancy of any duration

  (NOTE: Gravida II indicates a woman's second pregnancy.)

  M. Primigravida--Woman during her first pregnancy

  N. Multigravida--Woman who has borne children two or more times

  O. Para--Refers to previous pregnancies that have reached the period of viability

  (NOTE: Gravida III, para I indicates a third pregnancy and the birth of one viable infant.)

INFORMATION SHEET

P. Primipara--Woman who is having or has had one child that is considered viable

Q. Multipara--Woman who has borne more than one viable infant

R. Obstetrics--Branch of medicine concerning the care of women during pregnancy, labor, and puerperium

S. Obstetric forceps--Large, double-bladed traction forceps used to assist in difficult or delayed labor

T. Cesarean section--Delivery of the fetus through an abdominal incision

U. Puerperal sepsis--Febrile state caused by infection of the endometrium and septicemia following delivery; childbed fever

V. Puerperium--State of a woman in labor or of one who has just been delivered; the period from delivery to the time when the uterus has regained its normal size, usually about six weeks

W. Natal--Pertaining to birth

X. Copulation--Act of sexual union; coitus; sexual intercourse

Y. Erection--Enlarged state of erectile tissue when engorged with blood, as of the penis or clitoris

Z. Ovulation--Maturation and discharge of the ovum

AA. Abortion--Artificially induced expulsion of an embryo or fetus before it is viable, usually during the first twelve to twenty-four weeks of gestation; prematurely expelled product of conception

BB. Miscarriage--Expulsion of the fetus before it is viable, between the fourth and seventh month

CC. Term--Time of expected delivery

DD. Premature delivery--Expulsion of the fetus after the twenty-eighth week and before term

EE. Viable--Capable of living; capable of growing and developing

FF. Implantation--Embedding of the embryo into or on the endometrium

II. Historical persons and events

A. Primitive tribes (such as American Indians and African Negroes)--Mother delivered the child herself or with the assistance of another woman; birth surrounded with mystery and superstition

INFORMATION SHEET

B. Egyptian culture--Midwives assisted with normal deliveries but priests supervised abnormal deliveries

C. Greek and Roman cultures--Normal deliveries assisted by midwives under supervision of physicians; abnormal labor handled by physician

D. Eastern culture--Hindus practiced organized medicine with emphasis on cleanliness and sanitation, prenatal and postnatal care

E. Medieval period--Regression to mysticism in medical practice

F. William Harvey (1578-1657)--Described the circulation of blood and physiology of pregnancy

G. Peter Chamberlen (1560-1631)--Invented original obstetric forceps

(NOTE: Although Dr. Chamberlen designed and used the forceps about 1580, the family kept the information secret until 1813.)

H. Wittenberg--Performed first cesarean section on a living mother in 1618

I. Seventeenth to nineteenth centuries--Puerperal sepsis reached epidemic proportions

J. Alexander Gordon--Scottish physician who first demonstrated the contagiousness of puerperal sepsis in 1796

K. Oliver Wendell Holmes--Wrote a paper in 1843 about medical aseptic techniques useful in combating puerperal sepsis

L. Ignaz Semmelweis--Hungarian physician who in 1847 proved that puerperal sepsis was contagious and could be prevented by aseptic technique

(NOTE: In retrospect it appears incredible that over a hundred years passed before aseptic techniques were widely used although their effectiveness had been demonstrated.)

M. Twentieth century--Numerous advances including prenatal and postnatal care by physicians, control of infection through medical and surgical asepsis, and improved education of physicians and health personnel

III. Current trend--Great improvement in health care of mothers and infants has resulted in decreasing mortality rates

A. Maternal death rate--Decreased from 600 per 100,000 live births in 1915 to 20.5 per 100,000 in 1971

B. Infant death rate--Decreased from 100 per 1000 live births in 1915 to 19.2 per 1000 in 1971

INFORMATION SHEET

IV. Changing concepts in maternity care

- A. Family-centered maternity care--Family considered as a whole unit by the health professional team
- B. Changing nursing roles
    - 1. Nurse-midwife--Specially prepared nurse who supervises prenatal care, delivery, and postnatal care in normal pregnancy and delivery
    - 2. Maternity nurse--Nurse who assists physicians in helping parents cope with problems which arise during pregnancy and conducts in-service education and parent education programs
- C. Team approach to maternity nursing
    - 1. Many levels of personnel cooperate in providing maternity care, including registered and practical nurses, nursing assistants, baby nurses, physicians, and physicians' assistants
    - 2. Each team member delivers the care for which he/she has received educational preparation

V. Functions of the female reproductive structures

- A. Pelvis (Transparency 1)
    - 1. Contains and protects reproductive organs, bladder, and rectum
    - 2. Forms part of the birth canal
- B. Ovaries
    - 1. Develop and expel a mature ovum each month
    - 2. Produce the hormones estrogen and progesterone
- C. Fallopian tubes or oviducts
    - 1. Provide site for the union of sperm and ovum
    - 2. Propel ovum into uterus by peristaltic and ciliary actions
- D. Uterus
    - 1. Receives the fertilized ovum
    - 2. Provides housing and nourishment of the developing fetus

INFORMATION SHEET

- E. Bartholin glands--Secrete mucus
- F. External genitalia
    - 1. Mons veneris--Protects symphysis pubis
    - 2. Labia majora and minora--Protect inner vulva and clitoris
    - 3. Clitoris--Is organ of sexual excitation
    - 4. Vestibule--Contains openings of vagina, urethra, and Bartholin glands
    - 5. Vagina--Is organ of copulation; forms birth canal
    - 6. Perineum--Provides muscular support of pelvic organs
    - 7. Breasts--Secrete milk

VI. Parts of the pelvis (Transparency 1)

- A. Bones
    - 1. Sacrum
    - 2. Coccyx
    - 3. Ilium
    - 4. Ischium
    - 5. Pubis
    - 6. Ischial tuberosity
    - 7. Ischial spine
- B. Joints
    - 1. Symphysis pubis
    - 2. Sacroiliac articulations
    - 3. Sacrococcygeal articulation

VII. Pelvic measurements (Transparencies 2 and 3)

- A. Anteroposterior or true conjugate

    (NOTE: This is the diameter from the sacrum to the upper margin of the symphysis pubis and usually measures 11 cm or more.)

INFORMATION SHEET

B. Transverse diameter of inlet

(NOTE: This is the measurement across the widest portion of the pelvic inlet and usually measures 13.5 cm.)

C. Oblique diameters

(NOTE: The measurement from one sacroiliac articulation to the iliopubic eminence on the opposite side of the pelvis usually measures 12.5 cm or more.)

D. Transverse diameter of the outlet

(NOTE: The distance between the two ischial tuberosities usually measures 8 cm or more.)

VIII. Physiology of the female reproductive system (Transparency 4)

A. Production of hormones begins at puberty and ends at menopause

B. Anterior pituitary secretes three hormones which affect reproduction

1. FSH or follicle-stimulating hormone which induces maturing of ovarian follicles and production of estrogen

2. LH or luteinizing hormone which brings about ovulation and stimulates progesterone production

3. LTH or luteotropic hormone which stimulates the secretion of milk by the breasts

C. When conception does not occur, the unfertile ovum disintegrates soon after it reaches the uterus; the endometrium also begins to disintegrate

D. When conception occurs, the corpus luteum increases in size and continues production of progesterone for about three months; the endometrium is prepared for the implantation of the embryo

E. As the pregnancy progresses, the placenta forms and secretes progesterone and other hormones throughout the pregnancy

F. When no pregnancy occurs or at the termination of a pregnancy, the corpus luteum degenerates into scar tissue

G. The average length of the menstrual cycle is twenty-eight days with mensis lasting five to seven days

(NOTE: Length of the cycle may vary from twenty to forty-five days.)

INFORMATION SHEET

IX. Steps in conception

A. Fertilization

1. Viability of sperm and ovum

   a. Sperm--48 hours after ejaculation

   b. Ovum--12 to 24 hours after ovulation

2. Fertile period--Two days before ovulation until twenty-four hours after ovulation

3. Occurrence

   a. May occur in abdominal cavity before ovum enters fallopian tube

   b. Occurs in upper portion of fallopian tube usually

   (NOTE: The sperm secretes an enzyme which dissolves the protective covering of the ovum and permits penetration of the sperm. After one sperm enters the ovum, the protective covering becomes impermeable. The fertilized ovum is called a zygote.)

B. Implantation of the zygote

1. Fertilized ovum begins cell division and passes through the fallopian tube in three days

2. After floating freely in the uterine cavity for three or four more days, it begins implantation, usually on the upper posterior wall

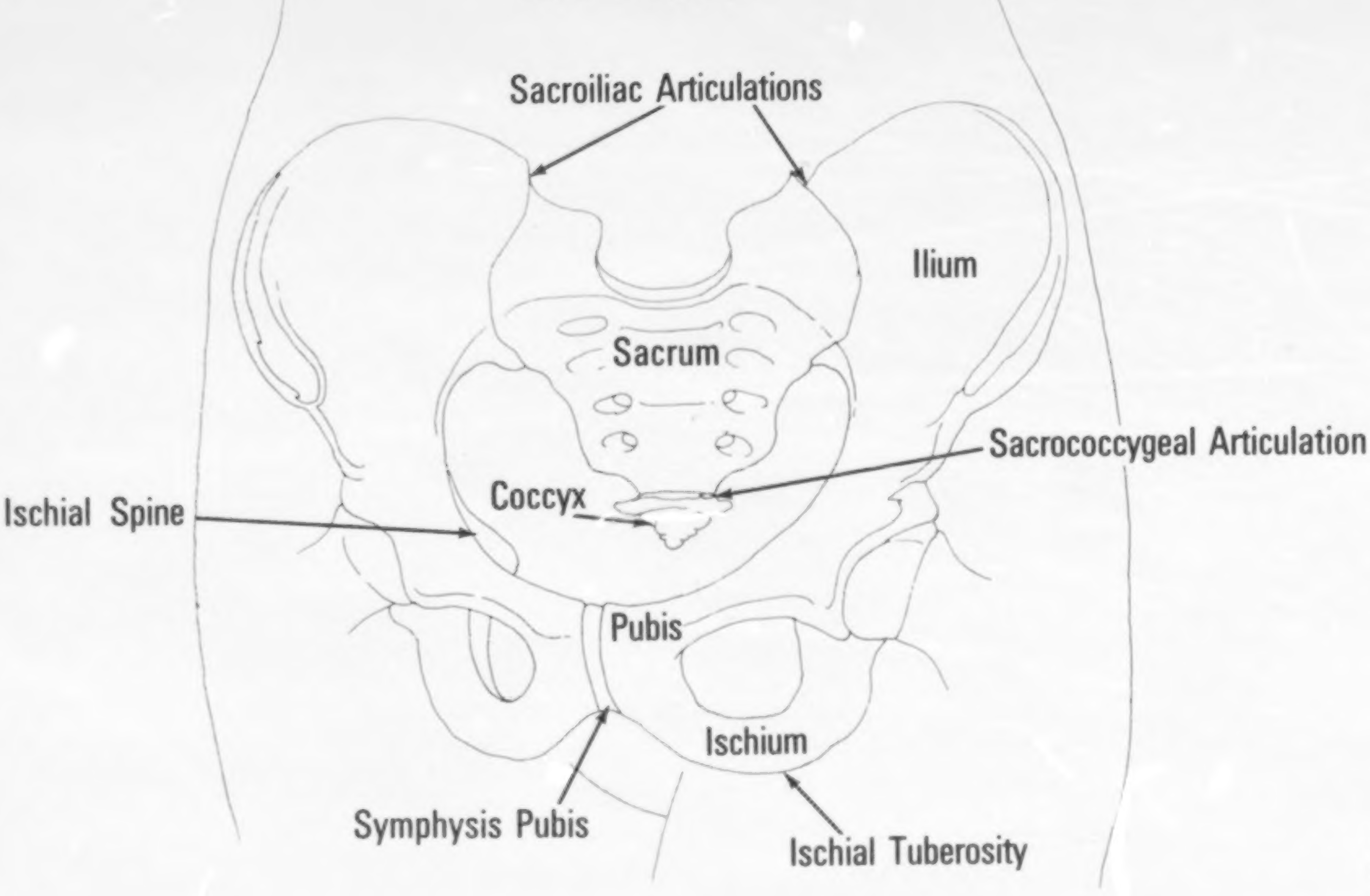
3. Outer layer of cells begins penetrating the uterine wall and by the end of about twelve weeks the placenta is fully formed

C. After implantation

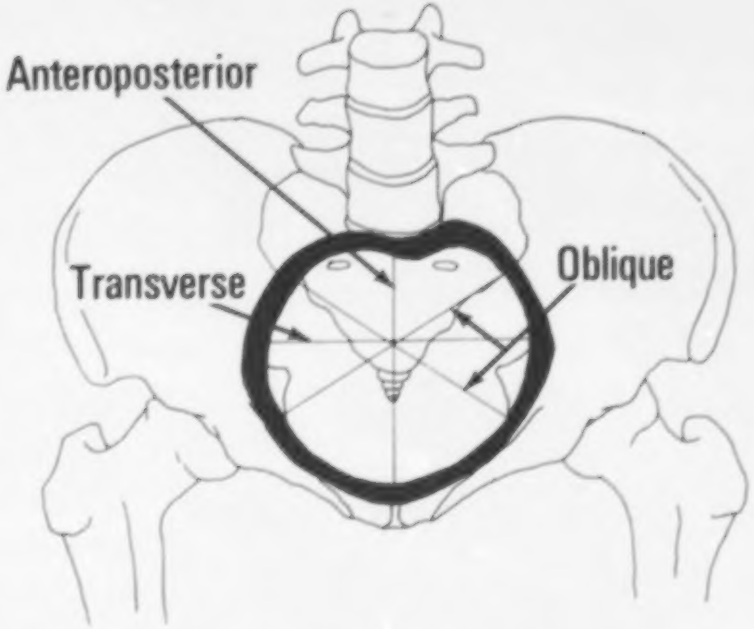
1. Endometrium becomes thick and vascular

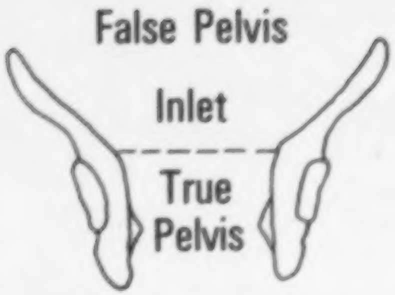
2. Nutrients and vitamins to nourish the fetus are stored in the endometrium

The Pelvis

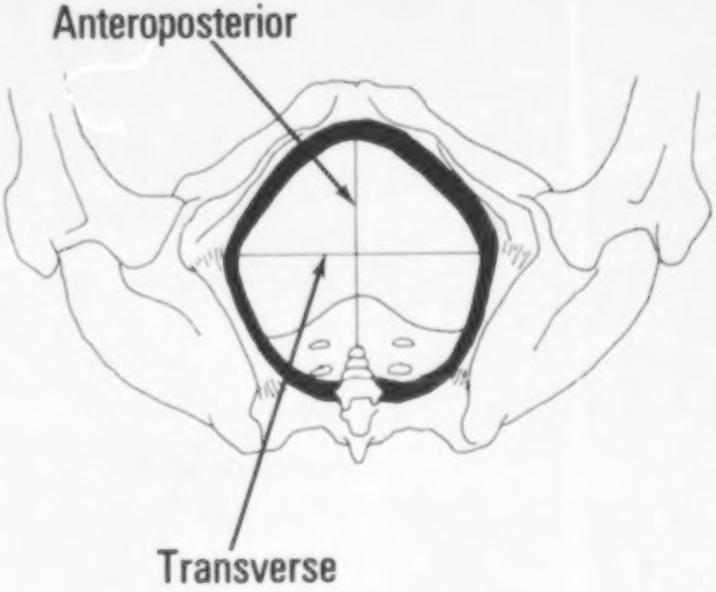

Sacroiliac Articulations
Ilium
Sacrum
Sacrococcygeal Articulation
Ischial Spine
Coccyx
Pubis
Ischium
Symphysis Pubis
Ischial Tuberosity

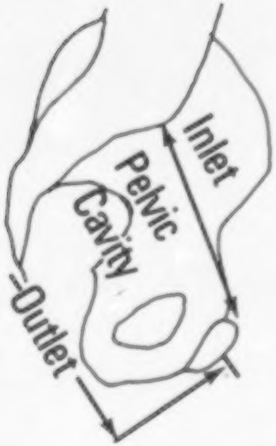
Pelvimetry: Inlet


Anteroposterior
Transverse
Oblique


False Pelvis
Inlet
True Pelvis

Pelvimetry: Outlet


Anteroposterior
Transverse


Inlet
Pelvic
Cavity
Outlet

The Menstrual Cycle and Pregnancy

UTERUS	DAYS OF CYCLE	OVARIES
Mensis	1-5	Follicle matures
Endometrium thickens	6-16	
	10-14	Ovulation occurs; follicle changes to corpus luteum
Fertile period Endometrium continues to thicken	14-16	Conception occurs; zygote floats through tube
Blastocyst floats freely in uterus	17-21	Corpus luteum enlarges, continues production of progesterone and estrogen
Blastocyst implants; outer layer begins forming placenta	21-22	
Placenta fully formed	12th week	Placenta assumes production of hormones

INTRODUCTION TO MATERNAL AND INFANT CARE
UNIT I

TEST

1. Match the terms on the right to the correct definition. (The answers to "a" through "m" will be found on this page.)

______a. Expulsion of the fetus before it is viable, between the fourth and seventh month

______b. Febrile state caused by infection of the endometrium and septicemia following delivery; childbed fever

______c. Fertilization of the ovum by the spermatozoon; occurs in the human female

______d. Artificially induced expulsion of an embryo or fetus before it is viable, usually during the first twelve to twenty-four weeks of gestation; prematurely expelled product of conception

______e. Woman, trained or experienced, who attends other women in labor and delivery

______f. Large, double-bladed traction forceps used to assist in difficult or delayed labor

______g. Measurement of the dimensions of the pelvis

______h. Refers to previous pregnancies that have reached the period of viability

______i. Pertaining to birth

______j. Union of ovum and sperm

______k. Maturation and discharge of the ovum

______l. Woman who has borne children two or more times

______m. Branch of medicine concerning the care of women during pregnancy, labor, and puerperium

1. Midwife
2. Ovulation
3. Obstetric forceps
4. Puerperal sepsis
5. Para
6. Natal
7. Obstetrics
8. Conception
9. Pelvimetry
10. Miscarriage
11. Fertilization
12. Multigravida
13. Abortion

(Answers to "n" through "z" will be found on this page.)

______n. Expulsion of the fetus after the twenty-eighth week and before term

______o. Woman who is pregnant; refers to a pregnancy of any duration

______p. Expulsion or extraction of a fetus and its membranes; parturition

______q. Capable of living; capable of growing and developing

______r. Enlarged state of erectile tissue when engorged with blood, as of the penis or clitoris

______s. State of the woman from conception to childbirth; gestation

______t. Embedding of the embryo into or on the endometrium

______u. Product of conception from the moment of fertilization to the end of the eighth week after fertilization

______v. State of a woman in labor or of one who has just been delivered; the period from delivery to the time when the uterus has regained its normal size, usually about six weeks

______w. Developing body in utero from the beginning of the ninth week after fertilization until birth

______x. Curved, hinged instrument with adjustable arms used for measuring the pelvis

______y. Woman who is having or has had one child that is considered viable

______z. Series of processes, especially the coordinated, periodic uterine contractions, whereby the fetus is expelled in parturition

14. Premature delivery
15. Primipara
16. Erection
17. Pelvimeter
18. Puerperium
19. Embryo
20. Labor
21. Delivery
22. Pregnancy
23. Gravida; Gr
24. Fetus
25. Implantation
26. Viable

(The answers for "aa" through "ff" are on this page.)

____aa. Woman who has borne more than one viable infant

____bb. Process of giving birth to young; childbirth

____cc. Act of sexual union; coitus; sexual intercourse

____dd. Woman during her first pregnancy

____ee. Time of expected delivery

____ff. Delivery of the fetus through an abdominal incision

27. Term

28. Multipara

29. Primigravida

30. Cesarean section

31. Copulation

32. Parturition

2. Discuss historical events and persons pertaining to obstetrics.

3. Discuss the current trend in maternal and infant mortality rates.

4. Discuss changing concepts in maternity care.

5. List the functions of each of the female reproductive structures listed below.
   a. Ovaries
   b. Bartholin glands
   c. Fallopian tubes or oviducts
   d. Pelvis
   e. Uterus
   f. External genitalia
      1) Labia majora and minora
      2) Vestibule

3) Vagina

4) Breasts

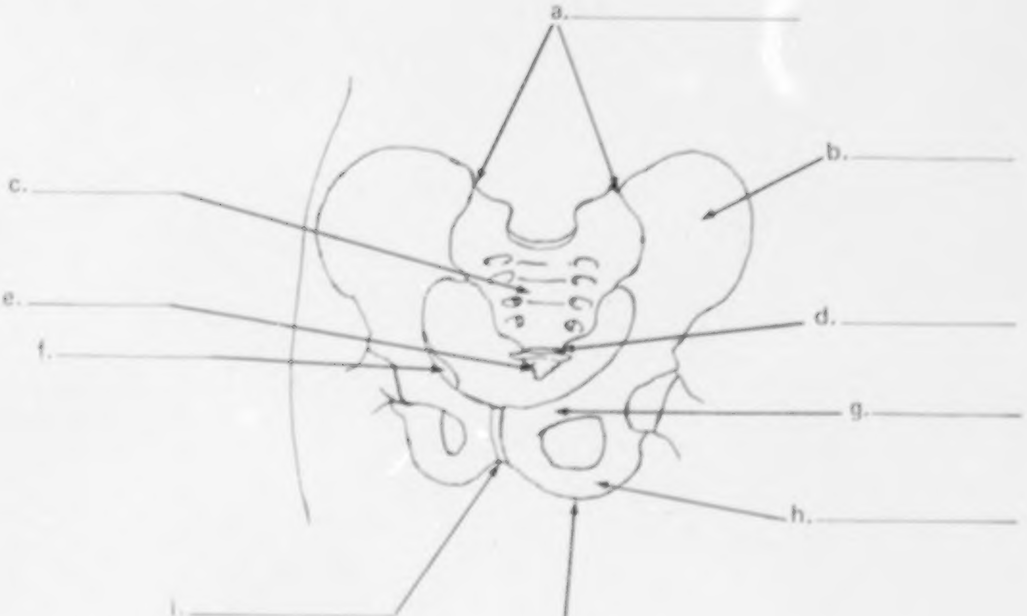
5) Perineum

6) Clitoris

7) Mons veneris

6. Identify the parts of the pelvis in the diagram below by placing the correct number in the blank provided.

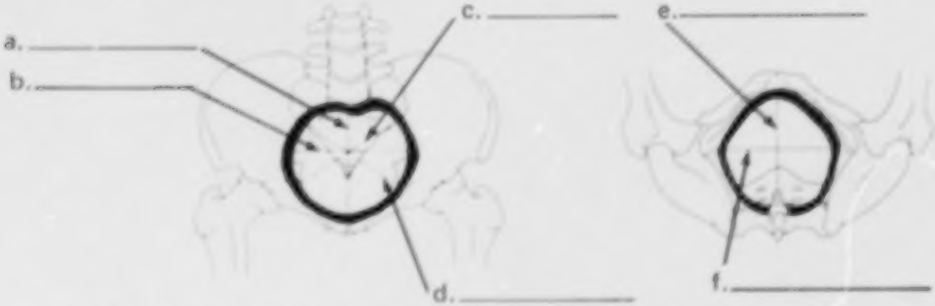
1. Coccyx
2. Ischial tuberosity
3. Ilium
4. Sacroiliac articulations
5. Pubis
6. Sacrum
7. Ischial spine
8. Symphysis pubis
9. Sacrococcygeal articulation
10. Ischium



7. Identify the four pelvic measurements on the diagram below.

(NOTE: Answers may be used more than once.)

1. Oblique
2. Transverse diameter of the outlet
3. Transverse diameter of the inlet
4. Anteroposterior or true conjugate



8. Describe the physiology of the female reproductive system.

9. Describe the three steps in conception.

a.

b.

c.

INTRODUCTION TO MATERNAL AND INFANT CARE
UNIT I

ANSWERS TO TEST

1.

a.	10	i.	6	q.	26	y.	15
b.	4	j.	11	r.	16	z.	20
c.	8	k.	2	s.	22	aa.	28
d.	13	l.	12	t.	25	bb.	32
e.	1	m.	7	u.	19	cc.	31
f.	3	n.	14	v.	18	dd.	29
g.	9	o.	23	w.	24	ee.	27
h.	5	p.	21	x.	17	ff.	30

2. Discussion should include:

   a. Primitive tribes (such as American Indians and African Negroes)--Mother delivered the child herself or with the assistance of another woman; birth surrounded with mystery and superstition

   b. Egyptian culture--Midwives assisted with normal deliveries but priests supervised abnormal deliveries

   c. Greek and Roman cultures--Normal deliveries assisted by midwives under supervision of physicians; abnormal labor handled by physician

   d. Eastern culture--Hindus practiced organized medicine with emphasis on cleanliness and sanitation, prenatal and postnatal care

   e. Medieval period--Regression to mysticism in medical practice

   f. William Harvey (1578-1657)--Described the circulation of blood and physiology of pregnancy

   g. Peter Chamberlen (1560-1631)--Invented original obstetric forceps

   h. Wittenberg--Performed first cesarean section on a living mother in 1618

   i. Seventeenth to nineteenth centuries--Puerperal sepsis reached epidemic proportions

j. Alexander Gordon--Scottish physician who first demonstrated the contagiousness of puerperal sepsis in 1796

k. Oliver Wendell Holmes--Wrote a paper in 1843 about medical aseptic techniques useful in combating puerperal sepsis

l. Ignaz Semmelweis--Hungarian physician who in 1847 proved that puerperal sepsis was contagious and could be prevented by aseptic technique

m. Twentieth century--Numerous advances including prenatal and postnatal care by physicians, control of infection through medical and surgical asepsis, and improved education of physicians and health personnel

3. Discussion should include:

Great improvement in health care of mothers and infants has resulted in decreasing mortality rates

a. Maternal death rate--Decreased from 600 per 100,000 live births in 1915 to 20.5 per 100,000 in 1971

b. Infant death rate--Decreased from 100 per 1000 live births in 1915 to 19.2 per 1000 in 1971

4. Discussion should include:

a. Family-centered maternity care--Family considered as a whole unit by the health professional team

b. Changing nursing roles

1) Nurse-midwife--Specially prepared nurse who supervises prenatal care, delivery, and postnatal care in normal pregnancy and delivery

2) Maternity nurse--Nurse who assists physicians in helping parents cope with problems which arise during pregnancy and conducts in-service education and parent education programs

c. Team approach to maternity nursing

1) Many levels of personnel cooperate in providing maternity care, including registered and practical nurses, nursing assistants, baby nurses, physicians, and physicians' assistants

2) Each team member delivers the care for which he/she has received educational preparation

5. a. Ovaries
    1) Develop and expel a mature ovum each month
    2) Produce the hormones estrogen and progesterone

   b. Bartholin glands--Secrete mucus

   c. Fallopian tubes or oviducts
    1) Provide site for the union of sperm and ovum
    2) Propel ovum into uterus by peristaltic and ciliary actions

   d. Pelvis
    1) Contains and protects reproductive organs, bladder, and rectum
    2) Forms part of the birth canal

   e. Uterus
    1) Receives the fertilized ovum
    2) Provides housing and nourishment of the developing fetus

   f. External genitalia
    1) Labia majora and minora--Protect inner vulva and clitoris
    2) Vestibule--Contains openings of vagina, urethra, and Bartholin glands
    3) Vagina--Is organ of copulation; forms birth canal
    4) Breasts--Secrete milk
    5) Perineum--Provides muscular support of pelvic organs
    6) Clitoris--Is organ of sexual excitation
    7) Mons veneris--Protects symphysis pubis

6. a. 4
   b. 3
   c. 6
   d. 9
   e. 1
   f. 7
   g. 5
   h. 10
   i. 8
   j. 2

7. a. 4
   b. 3
   c. 1
   d. 1
   e. 4
   f. 2

8. Description should include:
   a. Production of hormones begins at puberty and ends at menopause
   b. Anterior pituitary secretes three hormones which affect reproduction
      1) FSH or follicle-stimulating hormone which induces maturing of ovarian follicles and production of estrogen
      2) LH or luteinizing hormone which brings about ovulation and stimulates progesterone production
      3) LTH or luteotropic hormone which stimulates the secretion of milk by the breasts
   c. When conception does not occur, the unfertile ovum disintegrates soon after it reaches the uterus; the endometrium also begins to disintegrate
   d. When conception occurs, the corpus luteum increases in size and continues production of progesterone for about three months; the endometrium is prepared for the implantation of the embryo
   e. As the pregnancy progresses, the placenta forms and secretes progesterone and other hormones throughout the pregnancy
   f. When no pregnancy occurs or at the termination of a pregnancy, the corpus luteum degenerates into scar tissue
   g. The average length of the menstrual cycle is twenty-eight days with mensis lasting five to seven days

9. Description should include:
   a. Fertilization
      1) Viability of sperm and ovum
         a) Sperm--48 hours after ejaculation
         b) Ovum--12 to 24 hours after ovulation
      2) Fertile period--Two days before ovulation until twenty-four hours after ovulation
      3) Occurrence
         a) May occur in abdominal cavity before ovum enters fallopian tube
         b) Occurs in upper portion of fallopian tube usually

b. Implantation of the zygote

    1) Fertilized ovum begins cell division and passes through the fallopian tube in three days

    2) After floating freely in the uterine cavity for three or four more days, it begins implantation, usually on the upper posterior wall

    3) Outer layer of cells begins penetrating the uterine wall and by the end of about twelve weeks the placenta is fully formed

c. After implantation

    1) Endometrium becomes thick and vascular

    2) Nutrients and vitamins to nourish the fetus are stored in the endometrium

PREGNANCY AND PRENATAL CARE
UNIT II

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list signs and symptoms of pregnancy and labor. The student should be able to describe physiological changes that occur during pregnancy, care during pregnancy, embryonic and fetal growth, and fetal circulation. The student should be able to discuss the cause and treatment of minor discomforts, complications, and diseases of pregnancy. The student should be able to tell how fetal circulation differs from postnatal circulation. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with pregnancy and prenatal care to the correct definitions.
2. List presumptive, probable, and positive signs and symptoms of pregnancy.
3. State Naegele's rule for determining the estimated date of confinement or the estimated date of delivery.
4. Discuss sex determination and heredity.
5. Describe physiological changes that occur during pregnancy, concerning weight gain, metabolism, breasts and genitals, and the cardiovascular, respiratory, digestive, endocrine, musculoskeletal, integumentary, and urinary systems.
6. Discuss the placenta including its description, development, functions, and the umbilical cord.
7. Describe embryonic and fetal growth.
8. Describe fetal circulation, telling how it differs from postnatal circulation of the infant.
9. Describe care during pregnancy concerning medical care, nutrition, cleanliness, breasts, bowel habits, clothing, teeth, and sleep, rest, and exercise.
10. Discuss preparation, advantages, and disadvantages of using hypnosis during pregnancy and childbirth.
11. Discuss preparation, advantages, and disadvantages of prepared childbirth.

12. Discuss causes and treatments of minor discomforts during pregnancy, including morning sickness, gingivitis, constipation, vaginal discharge, shortness of breath, leg cramps, dependent and physiologic edema, backache, varicosities, hemorrhoids, and striae.

13. Discuss causes and treatments of the following complications of pregnancy: hemorrhage, hyperemesis gravidarum, toxemias, incompetent cervical os, and blood incompatibilities.

14. Discuss the effects and treatments of the following diseases on the mother and/or the fetus: rubella, diabetes mellitus, cardiac disease, tuberculosis, syphilis, and gonorrhea.

15. List the symptoms, effects, causes, and treatment of nutritional anemia.

16. List six signs and symptoms of labor.

PREGNANCY AND PRENATAL CARE
UNIT II

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information sheet.

  C. Make transparencies.

  D. Discuss terminal and specific objectives.

  E. Discuss information sheet.

  F. Demonstrate prenatal exercises.

  G. Use models or fetal specimens from laboratory to show size of actual fetus.

  H. Demonstrate fetal circulation on model or chart.

  I. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objective sheet

  B. Information sheet

  C. Transparency masters

    1. TM 1--Placenta Previa

    2. TM 2--Placenta Abruptio

3. TM 3--Fertilization of the Ovum
4. TM 4--Division and Implantation
5. TM 5--First Three Months of Development
6. TM 6--Fetus: Fifth and Sixth Months
7. TM 7--Fetus: Full Term
8. TM 8--Maternal Sensitization to Rh Factor

D. Test

E. Answers to test

II. References:

A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

B. Freisner, Arlyne, and Beverly Raff. *Obstetric Nursing.* Flushing, New York: Medical Examination Publishing Company, Inc., 1974.

C. Guyton, Arthur C. *Function of the Human Body.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

D. Thompson, Ella M., and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1972.

E. Broadribb, Violet, and Charlotte Corliss. *Maternal-Child Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

F. Brunner, Lillian S. et al. *The Lippincott Manual of Nursing Practice.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1974.

III. Other materials:

A. Films

1. "Not Me Alone." Polymorph Films, Inc., 331 Newberry, Boston, Massachusetts 02115.
2. "Story of Eric." Centre Films, 1103 North El Centro, Hollywood, California 90038.

   (NOTE: The above films are available to Oklahoma instructors from the Oklahoma State Department of Health.)

3. "Education for Childbirth." Ohio State University.

4. "Ladies in Waiting." Sterling Education Films, 241 East 34, New York 10016.

5. "Pregnancy and Birth." Films, Inc., 1144 Wilmette Avenue, Wilmette, Illinois 60091.

   (NOTE: The above film is available to Oklahoma instructors from the Curriculum and Instructional Materials Center, State Department of Vocational and Technical Education, 1515 West Sixth Avenue, Stillwater, Oklahoma 74074.)

6. "Antepartum Problems." Squibb Film Library.

7. "Pre-eclampsia, Eclampsia." Ortho Pharmaceuticals.

8. "Pregnancy Testing in the Seventies." Organon, Inc.

B. Filmstrips

1. Human Development: Birth to Two and One-half Years Series "Program 1: Pregnancy, Birth, and the Newborn." Concept Media.

   (NOTE: The following filmstrips are available from Medical Electronic Educational Services, Inc., 29423 West Six Mile Road, Livonia, Michigan 48152.)

2. "Prenatal Care." Maternity Nursing Series, Lesson 3.

3. "Feto-Pelvic Relationships." Maternity Nursing Series, Lesson 4.

PREGNANCY AND PRENATAL CARE
UNIT II

INFORMATION SHEET

I. Terms and definitions

   A. Prenatal--Before delivery; antepartum

   B. Hegar's sign--Softening of the lower segment of the uterus during the second and third months of pregnancy

   C. Goodell's sign--Softening of the cervix of the uterus which usually occurs about the time of the second missed menstrual period

   D. Chadwick's sign--Dark blue discoloration of the vaginal mucous membrane

   E. Linea nigra--Dark pigmented line often present in pregnant women and extending from the pubes upward in the midline

   F. Chorion--Outermost fetal membrane which surrounds the amnion

   G. Amnion--Innermost of the fetal membranes forming a fluid-filled sac for the protection of the embryo

   H. Amniotic fluid--Transparent, almost colorless fluid contained in the amnion and composed of albumin, urea, creatinine, water, and various salts

   I. Striae--White, shiny, slightly depressed lines on the abdomen, breasts, or thighs following prolonged stretching of the skin; stretch marks

   J. Chloasma gravidarum--Brownish pigmentation of the face during pregnancy

   K. Trimester--Stage or period of three months of a pregnancy

   L. Morning sickness--Nausea and vomiting usually in the early part of the day, occurring in the first months of a pregnancy

   M. Prepared childbirth--Form of childbirth in which psychological, physiological, and emotional aspects are emphasized in order to educate the patient for labor and, when possible, to reduce or eliminate the use of drugs

      (NOTE: This may also be called *natural childbirth* or *preparation for childbirth.*)

   N. Lightening--Descent of the fetal head into the pelvic inlet

INFORMATION SHEET

O. Toxemia--Pathological condition sometimes occurring in the last half of pregnancy with symptoms of hypertension, edema, proteinuria, sodium retention, and convulsions or coma

P. Varicosity--Vein which has become abnormally dilated and tortuous because of interference with venous drainage or weakness of the walls

(NOTE: They are also called *varices*, singular *varix*.)

Q. Hemorrhoid--Varices in the lower rectal or anal wall

R. Ectopic pregnancy--Implantation of the fertilized ovum outside the uterine cavity

S. Placenta previa--Placenta which is implanted in the lower portion of the uterus (Transparency 1)

(NOTE: There are three types of placenta previa - total with the cervical os completely covered by the placenta; partial with the cervical os partially covered; and low implantation with the placenta edge at the opening of the os but not covering it.)

T. Placenta abruptio--Premature separation of the placenta before labor or delivery (Transparency 2)

U. Hydatid mole--Transformation of all or part of the placenta into grape-like cysts with rapid growth of the uterus and with hemorrhage

V. Hyperemesis gravidarum--Prolonged and excessive vomiting in pregnancy

W. Dilatation--Expansion of an orifice or opening

X. Effacement--Gradual flattening of the cervix during labor

Y. Incompetent cervical os--Mechanical defect in the cervix causing dilatation and effacement in early pregnancy

Z. Amniocentesis--Transabdominal puncture of the amniotic sac to obtain a sample of amniotic fluid

AA. Anomaly--Any deviation from the usual or normal

BB. Hydramnios--Excessive volume of amniotic fluid

CC. Bloody show--Blood-tinged mucus discharged from the vagina before or during labor

INFORMATION SHEET

II. Signs and symptoms of pregnancy

A. Presumptive–Pregnancy may be assumed but these symptoms may indicate other conditions

1. Amenorrhea

2. Morning sickness

3. Frequent urination

4. Tenderness and fullness of the breasts

B. Probable–More definitive than the presumptive symptoms but not absolute

1. Enlargement of the abdomen

2. Changes in the uterus and cervix

Examples: Hegar's, Goodell's, and Chadwick's signs

3. Positive pregnancy test

Examples: Aschheim-Zondek, Friedman, Gravindex, and Pregnosticon tests

4. Linea nigra in first pregnancy

C. Positive–Indisputable evidence of pregnancy

1. Fetal heart sounds

2. Fetal movements felt by an examiner

3. X-ray showing the fetal skeleton

III. Naegele's rule for determining the estimated date of confinement (EDC) or the estimated date of delivery (EDD)–Count back three calendar months from the first day of the last menstrual period and add seven days

IV. Sex determination and heredity

A. Each mature ovum and sperm has twenty-three chromosomes

B. Each chromosome is composed of an unknown number of genes, the units which transmit hereditary characteristics

INFORMATION SHEET

C. Only one of the twenty-three chromosomes determines sex

1. Female ovum carries only one type of chromosome to determine sex, X
2. Male spermatozoon may carry either one of two sex chromosomes, X or Y
3. When the ovum units with a sperm cell carrying an X chromosome, the baby will be a girl; if the sperm cell contains a Y chromosome, the baby will be a boy

D. Chromosomal abnormalities may occur when

1. Chromosomes divide unevenly with too much or too little material transmitted
2. Chromosomes break and parts of two chromosomes unite to form crossover of material

E. Transmission of too many or too few chromosomes or incomplete chromosomes results in congenital malformation

F. A large percentage of abnormal fetuses are expelled by spontaneous abortions; approximately 3 to 5 percent of all live births are infants who have survived to full term with congenital malformation

G. Some genetic disorders cause little difficulty; others may be severe handicaps

Examples of genetic disorders:	Down's syndrome or mongolism, phenylketonuria or PKU, and diabetes mellitus

V. Physiological changes that occur during pregnancy

A. Weight gain--Average gain of twenty pounds

1. Growth of fetus, placenta, amniotic fluid, and uterus accounts for thirteen to fourteen pounds
2. Remainder of weight gain is from the increase in blood and extracellular fluid

B. Metabolism-Gradually increases to provide for the growing fetus and the necessary energy to carry the increasing load

INFORMATION SHEET

C. Cardiovascular and respiratory systems

1. Blood volume increases to supply the fetus

   (NOTE: The increase of blood volume produces evidence of false anemia.)

2. Blood pressure remains about the same as before pregnancy

3. Heart and lungs are gradually displaced upward by growing fetus

4. Pulse and respiratory rate increase

5. Blood becomes richer in protein

D. Digestive system

1. Stomach and intestines are displaced upward

2. Tone and motility of tract and secretion of stomach acid and pepsin decrease, digestive process becomes slower, and constipation occurs frequently

E. Endocrine system

1. Glands increase in size and activity

2. Metabolism rate gradually increases as much as twenty-five percent

F. Breasts

1. Blood vessels and secreting glands enlarge, producing a sensation of fullness

2. Breasts, nipples, and areola enlarge and become more pigmented

3. Breasts may tingle

G. Musculoskeletal system

1. Symphysis pubis separates

2. Lordosis increases due to weight increase

3. Hip joints separate, resulting in wider pelvic girdle

4. Pendulous abdomen may require additional support

INFORMATION SHEET

H. Integumentary system

1. Striae appear on breasts, abdomen, thighs, and buttocks

2. Pigmentation may increase

   a. On the face--Chloasma gravidarum

   b. On the abdomen--Linea nigra

I. Urinary system

1. Kidneys must increase output

2. Frequency of urination occurs in the first and third trimesters due to increased pressure on the bladder

3. Adequate fluid intake is essential to maintain kidney function and bladder tone

J. Genitals

1. Uterus increases greatly in size from a solid organ to a thin-walled muscular sac; additional weight of uterus and fetus causes strain on muscles and ligaments of back

2. Cervix softens early in pregnancy

3. Vaginal mucosa thickens; vaginal muscles hypertrophy

4. Perineal skin and muscles hypertrophy; connective tissue loosens

VI. The placenta (Transparency 4)

A. Description

1. This dark red, circular organ is about eight inches in diameter and one to one and one-half inches thick

2. Weight is approximately one pound

3. Fetal side is smooth and glistening with blood vessels clearly visible

4. Maternal side is irregularly rough and composed of many small lobes called cotyledons

INFORMATION SHEET

B. Development

1. Fingerlike projections from the chorion of the fertilized ovum penetrate the uterine wall to provide nourishment for the fertilized ovum

2. Full development is reached by the twelfth week of the pregnancy

C. Functions

1. Connects fetus to uterine wall

2. Provides for nutrition, excretion, and respiration of the fetus

3. Secretes hormones

    a. Progesterone to inhibit uterine contractions and aid in maintaining pregnancy

    b. Estrogen to aid in growth and development of the fetus and lactation

4. Acts as protective barrier to prevent some drugs and harmful organisms from entering the fetal circulation

D. Umbilical cord

1. Composed of two arteries and one vein intertwined and covered by a soft jellylike substance called Wharton's jelly

2. Attaches to the center of the placenta and enters the fetus at approximately the center of the abdominal wall

VII. Embryonic and fetal growth

A. Period of the ovum (Transparencies 4 and 5)

1. Union to thirty hours--Mature ovum and sperm, each with twenty-three chromosomes, unite to produce a fertilized ovum with forty-six chromosomes

2. Thirty hours to third day--Fertilized ovum, called a zygote, begins to divide rapidly forming two cells, then four cells, eight cells, and so on

3. Fourth day--Cells continue to divide to form a hollow ball with an inner and outer layer of cells

4. Fifth to seventh day--Outer layer of cells sends out projections which will develop into the placenta and become implanted into the uterine wall

INFORMATION SHEET

B. Period of the embryo--To eighth week

1. Cell division and growth continue (Transparency 5)
2. Inner layer of cells divides into three distinct layers which begin the formation of specific structures of the body
3. Embryo is about one-fourth inch long
4. Heart develops

C. Period of the fetus--Ninth week to birth (Transparencies 6 and 7)

1. Head becomes prominent with recognizable features; fetus about one inch long by the second lunar month
2. Bones, baby teeth, fingers, and toes begin to form; sex can be determined by the third lunar month
3. Fetus grows to six inches in length and four ounces in weight by the fourth month
4. Fetal heart becomes audible and mother feels movement by the fifth month
5. Fetus resembles miniature baby by the sixth lunar month; considered viable but usually will not survive if delivered
6. Fetus weighs two and one-half pounds by the end of seventh lunar month; better chance for survival
7. Body begins to fill out with subcutaneous layer of fat; weighs about six pounds by the eighth lunar month; chance of survival is very good
8. Length of term varies from 240 to 300 days; usual length is 280 days or 10 months or 40 weeks

VIII. Fetal circulation

A. Umbilical arteries carry the blood loaded with carbon dioxide and waste products to the placenta

B. Oxygenated blood is carried to the fetus from the placenta through the single umbilical vein

C. Blood enters the fetal circulation through the ductus venosus, which passes directly through the liver and empties into the vena cava

INFORMATION SHEET

D. From the vena cava most of the blood passes from the right atrium through an opening, the foramen ovale, into the left atrium and into the aorta

E. The remainder of the blood passes through the right ventricle, into the pulmonary artery, and then through a vessel called the ductus arteriosus into the aorta

F. With the blood flowing through these three special structures, the ductus venosus, foramen ovale, and ductus arteriosus, only a very small amount of blood flows through the liver and the lungs

G. The functions of the liver and the lungs of the fetus are performed by the mother's liver and lungs

H. After birth all three of the special structures close and the blood flows through the liver and the lungs as in an adult

IX. Care during pregnancy

A. Medical care

1. Physical examination including

a. History and general physical

b. Pelvic evaluation including measurements, size, and shape

c. Vaginal examination with Pap smear and check for gonorrhea

d. Breast examination

e. Laboratory tests including urinalysis, VD tests, complete blood count, blood type, and Rh factor

2. Early and regular physical checkups with urinalysis, weight determination, blood pressure reading, and breast examination; during last trimester vaginal examination is done to determine condition of cervix and position and presentation of fetus

(NOTE: During early pregnancy, checkups are done once monthly. Beginning in the seventh month checkups are increased to two per month and during the eighth month they are usually done weekly.)

INFORMATION SHEET

B. Nutrition

1. Proper diet based on the basic four food groups
2. Increased caloric intake of approximately 200 calories per day with emphasis on increased protein rather than fats or carbohydrates
3. Vitamin/mineral supplements as prescribed
4. Increased intake of liquids

C. Sleep, rest, and exercise

1. Usual activities are permitted with more frequent periods for resting because of increasing metabolism
2. Exercise preserves muscle strength and tone; special exercises to aid in labor and delivery are taught in prepared childbirth classes
3. Body alignment changes as center of gravity changes; special exercises assist in pelvic realignment
4. Prolonged sitting increases pooling of blood in the legs and should be avoided
5. Strenuous activities and heavy lifting should be avoided in the last trimester

   (NOTE: Any exercise attempted should have the physician's approval.)

D. Cleanliness

1. Tub baths are usually permitted until the membranes rupture
2. Increased activity of skin glands and increased vaginal discharge may necessitate more frequent bathing
3. Internal vaginal douching is prohibited
4. Striae may be massaged with skin cream

E. Breasts

1. Well-fitted support is important as weight and size increase
2. Nipples should be cleaned daily and lanolin or cream applied as needed to prevent irritation or cracking
3. Drying nipples with a rough towel in the last trimester will help toughen them in preparation for breast-feeding

INFORMATION SHEET

F. Bowel habits

1. Reduced activity and expanding uterus increase tendency to constipation

2. Obstipation or constipation should be treated with

   a. Adequate fluid intake

   b. Increased intake of fruits and vegetables

3. Laxatives should be used only as prescribed

G. Clothing

1. Nonrestricting to prevent interference with circulation

2. Low-heeled shoes to assist in maintaining balance

3. Abdominal support as needed in latter part of pregnancy

H. Teeth

1. Early and regular dental checkups with necessary treatment

2. Maintenance of good dental care needed because of increased bacterial growth in mouth during pregnancy

X. Hypnosis

A. Preparation

1. Education of the expectant mother in the aspects of hypnotism is begun about the third month of pregnancy

2. Exercises in relaxation, techniques of breathing, and muscle use are practiced by the mother-to-be; exercises are usually more effective when performed in a group training class

3. Therapist reassures and encourages the expectant mother throughout the pregnancy and during labor

4. Sedation, analgesia, and anesthetic may be used to supplement hypnosis

INFORMATION SHEET

B. Advantages

1. Less medication is required

2. Patient is awake and cooperative during the birth process

3. Hypnotic and posthypnotic suggestions help to alleviate suffering and depression

C. Disadvantages

1. Much advance preparation and planning is required

2. Patient is in a suggestive state so great care is needed in what is said in patient's hearing

XI. Prepared childbirth

A. Preparation includes

1. Education about pregnancy and childbirth to dispel fears and misapprehensions

2. Exercises to strengthen and increase flexibility of muscles used in labor

   a. Pelvic rocking

   b. Tailor sitting

   c. Squatting and kneeling

3. Methods of completely relaxing muscles

4. Conditioning for labor and delivery with instruction concerning breathing and proper use of muscles

5. Involvement of father-to-be as helper throughout pregnancy and labor

B. Advantages

1. Decreases use of analgesia and anesthesia and possibilities of side effects in mother and infant

2. Increases maternal and paternal relationship by allowing both parents to participate in birth process

3. Reduces fear and anxiety through knowledge and understanding

4. Lessens difficulties in neonate

INFORMATION SHEET

C. Disadvantages

1. Requires additional time for personnel and prospective parents for adequate preparation
2. May not be effective for some people
3. Should be used only for those undergoing normal labor and delivery
4. Necessitates having a prepared coach throughout labor

XII. Minor discomforts of pregnancy, their causes and treatments

A. Morning sickness, heartburn, or indigestion

1. Causes
    - a. Diminished gastric secretions and motility
    - b. Physiologic changes due to pregnancy
    - c. Emotional reaction
2. Treatment
    - a. Frequent small meals
    - b. Dry food eaten before arising
    - c. Medication such as antacids

B. Gingivitis

1. Cause--Deficiency of vitamin C, ascorbic acid
2. Treatment
    - a. Increased intake of vitamin C
    - b. Astringent mouthwash

C. Constipation

1. Causes
    - a. Diminished gastric motility
    - b. Pressure of uterus on intestines

INFORMATION SHEET

2. Treatment

    a. Adequate fluid intake

    b. Increased intake of fruit, vegetables, and other foods containing cellulose

    c. Physical activity such as walking

    d. Mild laxative or enema only as prescribed

D. Vaginal discharge

1. Causes

    a. Natural increase of secretions of vaginal and cervical glands

    b. Infection such as Monilia or Trichomonas

    (NOTE: Tendency toward increased incidence of infection is due to the higher estrogen level and change in the vaginal pH.)

    c. Cervical erosion

2. Treatment

    a. More frequent bathing with particular attention to vaginal and perineal area

    b. Treatment of infection as prescribed

E. Shortness of breath

1. Causes

    a. Pressure of uterus on the diaphragm or descending aorta

    b. Supine position during latter half of pregnancy

2. Treatment

    a. Change of position from supine to Sims'

    b. Elevation of upper part of body for sleep and rest

    c. Relief is obtained when lightening and/or delivery occur

INFORMATION SHEET

F. Leg cramps

  1. Causes

     a. Excess of phosphorous accumulated in the body

     b. Pressure of uterus on nerves and blood vessels supplying the lower extremities

     c. Ingestion of too much or too little milk

     d. Fatigue

  2. Treatment

     a. Calcium lactate, calcium gluconate, or vitamin B supplements as prescribed

     b. Pressure on toes to force them upward and to straighten knee

G. Dependent edema

  1. Causes

     a. Decreased circulatory efficiency in feet and legs in advanced pregnancy

     b. Increased pressure on groin and lower body

  2. Treatment

     a. Change position

     b. Elevate legs

H. Physiologic edema

  1. Causes

     a. Increased fluid in circulatory system

     b. Toxemia

  2. Treatment

     a. Limit salt intake

     b. Notify doctor immediately

INFORMATION SHEET

I. Backache

1. Causes
    - a. Change of posture and balance
    - b. Additional weight of pregnancy
    - c. Remaining in one position too long
    - d. Poor body mechanics

2. Treatment
    - a. Change of position or activity
    - b. Prescribed exercises
    - c. Support with girdle or corset

J. Varicosities in legs, groin, and/or vulva

1. Causes
    - a. Increased abdominal pressure
    - b. Prolonged standing
    - c. Tight clothing and/or round garters
    - d. Familial tendency

2. Treatment
    - a. No tight clothing or round garters
    - b. Frequent change of position
    - c. Elevation of the legs periodically above the level of the pelvis
    - d. Elastic bandage or support hose applied before getting out of bed
    - e. Avoidance of constipation

INFORMATION SHEET

K. Hemorrhoids

1. Causes

a. Constipation

b. Increased pressure of uterus

2. Treatment

a. Regular bowel habits

b. Sitz baths as prescribed

c. Application of analgesic ointments or use of suppositories as prescribed

L. Striae

1. Cause--Stretching and rupturing of internal tissues

2. Treatment

a. Exercise

b. Massage of affected skin with lotion

XIII. Complications of pregnancy, their causes and treatments

A. Hemorrhage

1. Causes

a. Early in pregnancy

1) Abortion

2) Ectopic pregnancy

b. Late in pregnancy

1) Placenta previa (Transparency 1)

2) Placenta abruptio (Transparency 2)

3) Hydatid mole

INFORMATION SHEET

2. Treatment and nursing responsibilities
    a. Observe vital signs
    b. Observe amount and character of bleeding
    c. Treat hemorrhage and shock as prescribed
    d. Save any expelled tissue for examination
    e. Observe aseptic technique to prevent infection
    f. Provide emotional support

B. Hyperemesis gravidarum

1. Causes--Exact cause unknown but condition may be due to
    a. Hormonal changes
    b. Maladjustment of maternal metabolism
    c. Change in gastric motility
    d. Toxicity
    e. Anxiety and/or emotional problems
2. Treatment and nursing responsibilities
    a. Adequate care of morning sickness may prevent condition
    b. When hospitalization is required treat with
        1) Bed rest
        2) IV therapy
        3) Medication to relieve symptoms
        4) Accurate intake and output
        5) Emotional support

C. Toxemias of pregnancy--Pre-eclampsia and eclampsia

(NOTE: Because so many theories have been proposed to explain etiology of toxemia, it has been called the "disease of theories.")

1. Cause--Unknown

INFORMATION SHEET

2. Predisposing factors
    a. Poor nutrition
    b. Inadequate protein intake
    c. Excessive weight gain
    d. Hypertension
    e. Diabetes
    f. History of toxemia in patient or family
3. Treatment and nursing responsibilities
    a. Prevention by
        1) Early and continued prenatal care
        2) Early observation for symptoms
        3) Limited weight gain
        4) Restricted sodium intake; administration of diuretics
        5) Increased rest and quiet
        6) Medication as needed to lower blood pressure
        7) Increased fluid intake
        8) Restricted food intake as indicated
        9) Close observation for further complications until after delivery
        10) Sedatives neither restricted nor forced
        11) Protection in the event of convulsions
        12) Termination of pregnancy if condition persists

D. Incompetent cervical os

1. Cause--Unknown but may be due to trauma

INFORMATION SHEET

2. Treatment--Shirodkar operation or purse-string suture

   (NOTE: A running-stitch suture is placed around the cervix and pulled taut to close the cervical os. Delivery may be through the vagina or by cesarean section. Before vaginal delivery, the suture must be severed.)

E. Blood incompatibilities

1. Rh factor (Transparency 8)

   a. Cause

      1) Rh negative mother conceives baby with Rh positive father

      2) Rh positive gene is dominant

      3) Sensitization of mother to Rh factor may occur during labor and delivery of first baby or may result from receiving a transfusion with Rh positive blood

      4) After sensitization mother begins producing antibodies

      5) During subsequent pregnancies, antibodies from the mother cross the placental barrier and cause destruction of red blood cells in the fetus

   b. Treatment

      1) Development of antibodies can be prevented by the administration of anti-Rh globulin within seventy-two hours following delivery

      2) An amniocentesis may be done to determine if sensitization has occurred; an intrauterine fetal transfusion may be performed if indicated

2. ABO incompatibility

   a. Causes

      1) Mother with type O blood conceives baby with a father with type A, B, or AB

INFORMATION SHEET

2) Blood cells of fetus hemolyze due to maternal antibodies but reaction is usually less severe than Rh incompatibility

3) Condition can occur in firstborn but does not increase in severity in subsequent pregnancies

b. Treatment of mother is not needed

XIV. Diseases that affect the mother and/or fetus and their treatment

A. Rubella, three day or German measles

1. Effect

a. May cause congenital anomalies if contracted during first trimester of pregnancy

b. May be spread from the affected neonate to others through contact

2. Treatment

a. Pregnant woman should contact her physician immediately if exposed to rubella

b. All children should be immunized before puberty

(NOTE: It has been determined that the vaccine as well as the disease may cause deformities in the fetus if given during pregnancy or within several months of conception. Therefore, immunization should be done prior to possibility of a pregnancy occurring.)

c. Pregnant women should be tested for rubella antibodies and those who are susceptible should be immunized a few days after delivery

d. Mothers who contracted rubella during pregnancy as well as their infants should be isolated during hospitalization

B. Diabetes mellitus

1. Effect-Increased tendency toward complications

a. Toxemia

b. Premature labor

INFORMATION SHEET

c. Stillbirth

d. Oversized infant

e. Neonate mortality

f. Congenital defects

g. Hydramnios

h. Hemorrnage

2. Treatment

a. Instruction for self-care

b. Rigid control and frequent adjustments of diet and insulin during pregnancy and puerperium

c. Urine tests daily as instructed

d. Low sodium diet as needed to decrease edema

e. Early delivery except in cases of mild diabetes

f. Close observation for signs of hypoglycemia, hyperglycemia, and acidosis

g. Observation for uterine bleeding

C. Cardiac disease

1. Effect

a. Added strain of pregnancy may cause serious complications

b. Overexertion, colds, sore throat, and influenza may cause heart failure

c. More careful observation will be required throughout pregnancy, delivery, and puerperium

2. Treatment

a. Keep weight gain at a minimum

b. Prevent or treat anemia

c. Avoid exposure to infections and upper respiratory diseases

INFORMATION SHEET

- d. Avoid exertion such as carrying heavy objects, moving furniture, strenuous exercise, and climbing hills or stairs
- e. Sleep at least eight to ten hours with frequent rest periods during the day
- f. Reduce strain during labor and delivery through close observation and reducing discomforts as much as possible
- g. Observe every fifteen minutes during first stage of labor for discomfort, pulse and respiratory rates, blood pressure, and dyspnea
- h. Limit bearing down with contractions during second stage of labor to prevent fatigue
- i. Administer oxygen as indicated
- j. Observe carefully for signs of cardiac distress

D. Tuberculosis

1. Effect
    - a. Disease is easily transmitted to the neonate; therefore, women with active tuberculosis should be advised to delay pregnancy
    - b. Long, hard labor may have an adverse effect
    - c. Pregnancy does not adversely affect tubercular patient but control of the disease is necessary
2. Treatment
    - a. Instruction in self-care and preventive measures to be taken pertaining to the infant and others
    - b. Adequate rest and diet
    - c. Administration of anti-tubercular medications

      (NOTE: Surgical lobe resection or collapse of lung may be indicated in the third trimester.)
    - d. Sedatives or narcotics as needed to keep patient comfortable and relaxed during labor
    - e. Isolation of mother during hospitalization to prevent spread of active disease; neonate should be kept away from the mother as long as transmission of disease is possible

INFORMATION SHEET

E. Syphilis

1. Effect

   a. Active syphilis when not treated may cause abortion, premature delivery, or delivery of an infected baby

   b. Placental transfer of the causative organism, Treponema pallidum, may occur after the fourth month of pregnancy

2. Treatment

   a. Test for syphilis at beginning of pregnancy

   b. Successful treatment will insure a healthy infant; treatment must be started before the eighteenth week of gestation

      (NOTE: It is possible for a mother who has been treated to have a positive reaction and still have a healthy, nonsyphilitic infant.)

   c. A syphilitic mother should not nurse her infant if she has been infected within two years prior to the birth

      (NOTE: The infection is not carried in the breast milk, but it is possible for the mother to have an infectious lesion on or about the nipple with the organism infecting a break in the infant's skin or mucosa.)

F. Gonorrhea

1. Effect

   a. May be transmitted to the baby's eyes while passing through the vagina

   b. May cause blindness by scarring and fibrosis if untreated

   c. May spread to pelvic cavity before or after, but not during, a pregnancy

   d. May cause pelvic inflammatory disease which can result in sterility

2. Treatment

   a. Administer appropriate antibiotic

   b. Instill one percent silver nitrate or an antibiotic preparation in the eyes of all neonates

INFORMATION SHEET

XV. Nutritional anemia

- A. Causes
    - 1. Iron-poor diet

      (NOTE: A pregnant woman needs one mgm of iron daily during the first trimester, four mgm daily during second trimester, and twelve mgm daily during the third trimester.)
    - 2. Increased requirements of fetus during last six weeks of gestation
    - 3. Mother's inability to assimilate iron
- B. Symptoms
    - 1. Weakness
    - 2. Dyspnea
    - 3. Fatigability
    - 4. Pallor
    - 5. Low hemoglobin
- C. Effect
    - 1. Mother may be predisposed to postpartum infection
    - 2. Infant is predisposed to anemia
- D. Treatment
    - 1. Adequate diet with increased iron-rich foods such as green and yellow vegetables, egg yolks, yellow fruits, whole grain and enriched cereals, potatoes, tomatoes, molasses, nuts, raisins, and liver
    - 2. Iron preparations as prescribed

      (NOTE: Any injection of iron preparations should be given using Z-track technique.)

XVI. Signs and symptoms of labor

- A. Lightening--May occur two to four weeks before term in primiparas; may not occur until after onset of labor in multiparas

INFORMATION SHEET

B. Bloody show

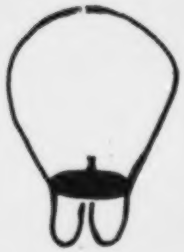
C. Recurrent pains in back and/or abdomen

D. Urinary frequency

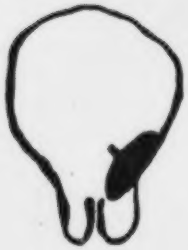
E. Rupture of membranes

F. Uterine contractions which gradually increase in frequency, intensity, and duration

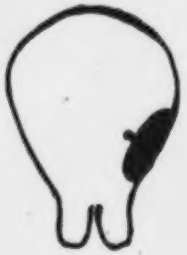
Placenta Previa



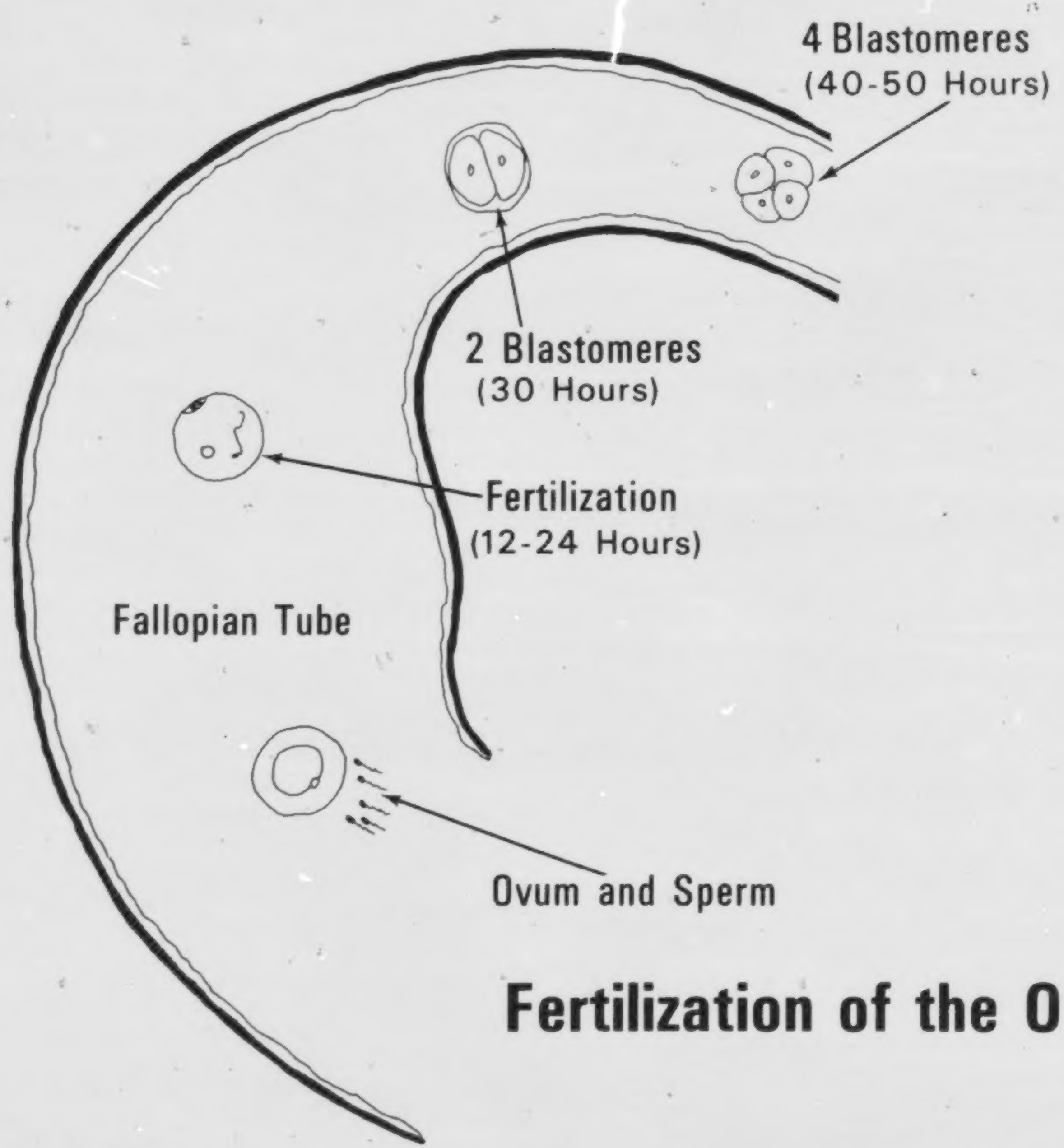
Total



Partial

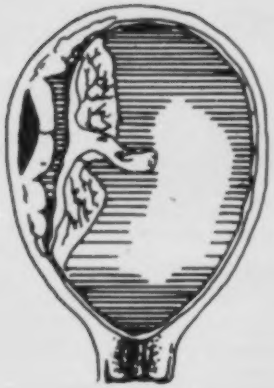


Low Implantation

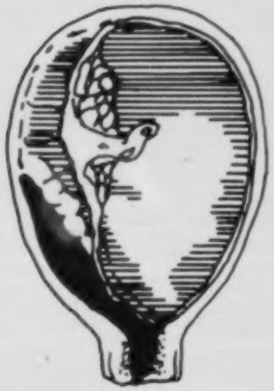

4 Blastomeres
(40-50 Hours)
2 Blastomeres
(30 Hours)
Fertilization
(12-24 Hours)
Fallopian Tube
Ovum and Sperm

Fertilization of the Ovum

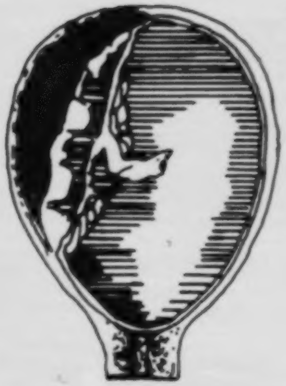
Placenta Abruptio



Partial



Partial

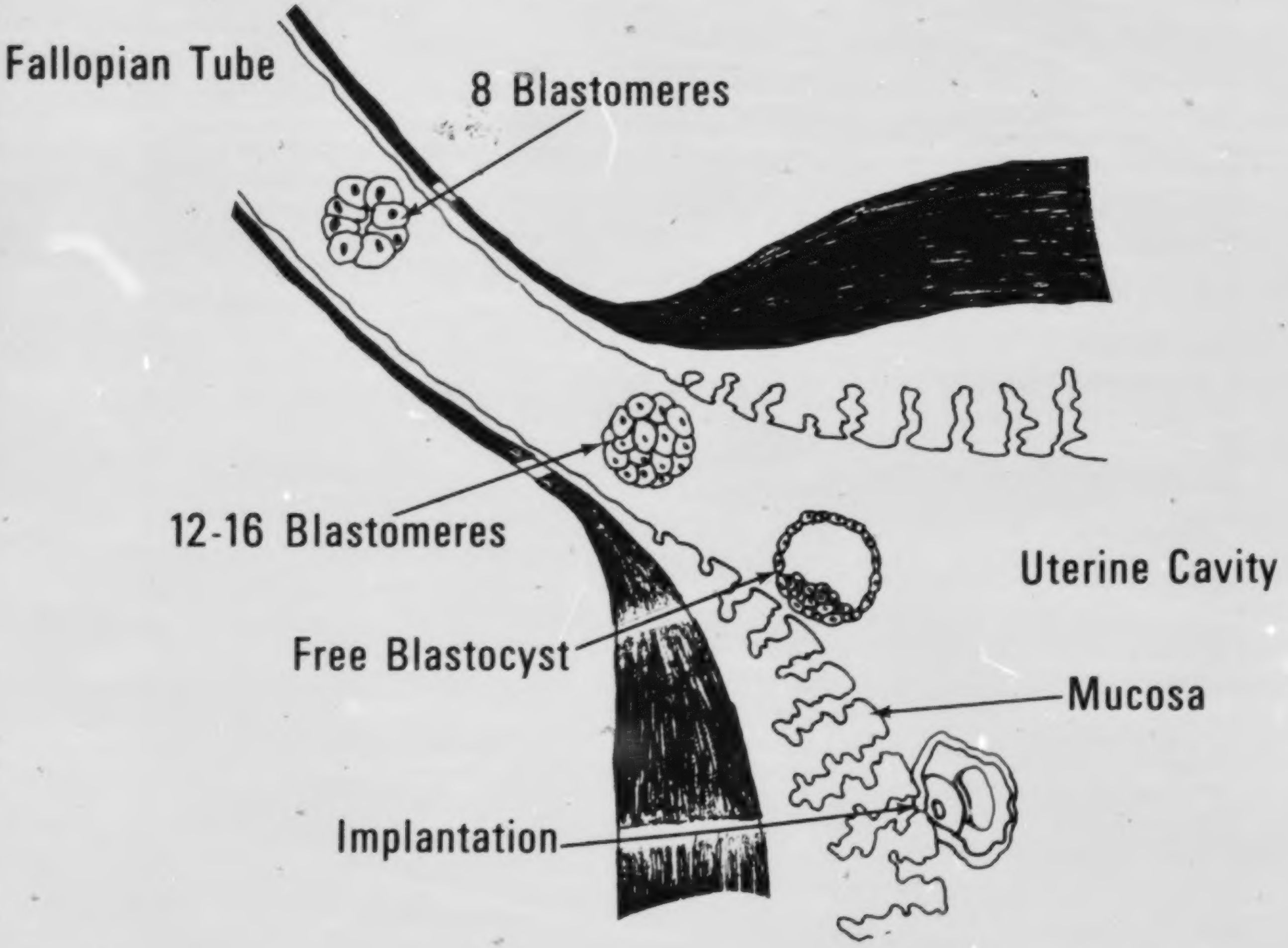


Complete

698

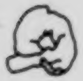
699

Division and Implantation

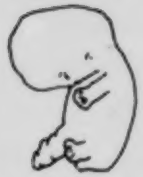

Fallopian Tube
8 Blastomeres
12-16 Blastomeres
Uterine Cavity
Free Blastocyst
Mucosa
Implantation

First Three Months of Development

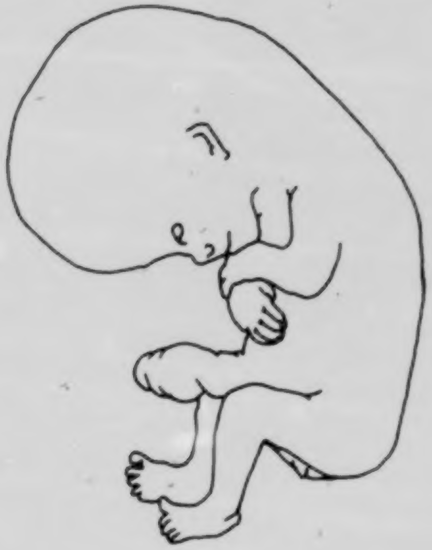
(Actual Size)



One Month

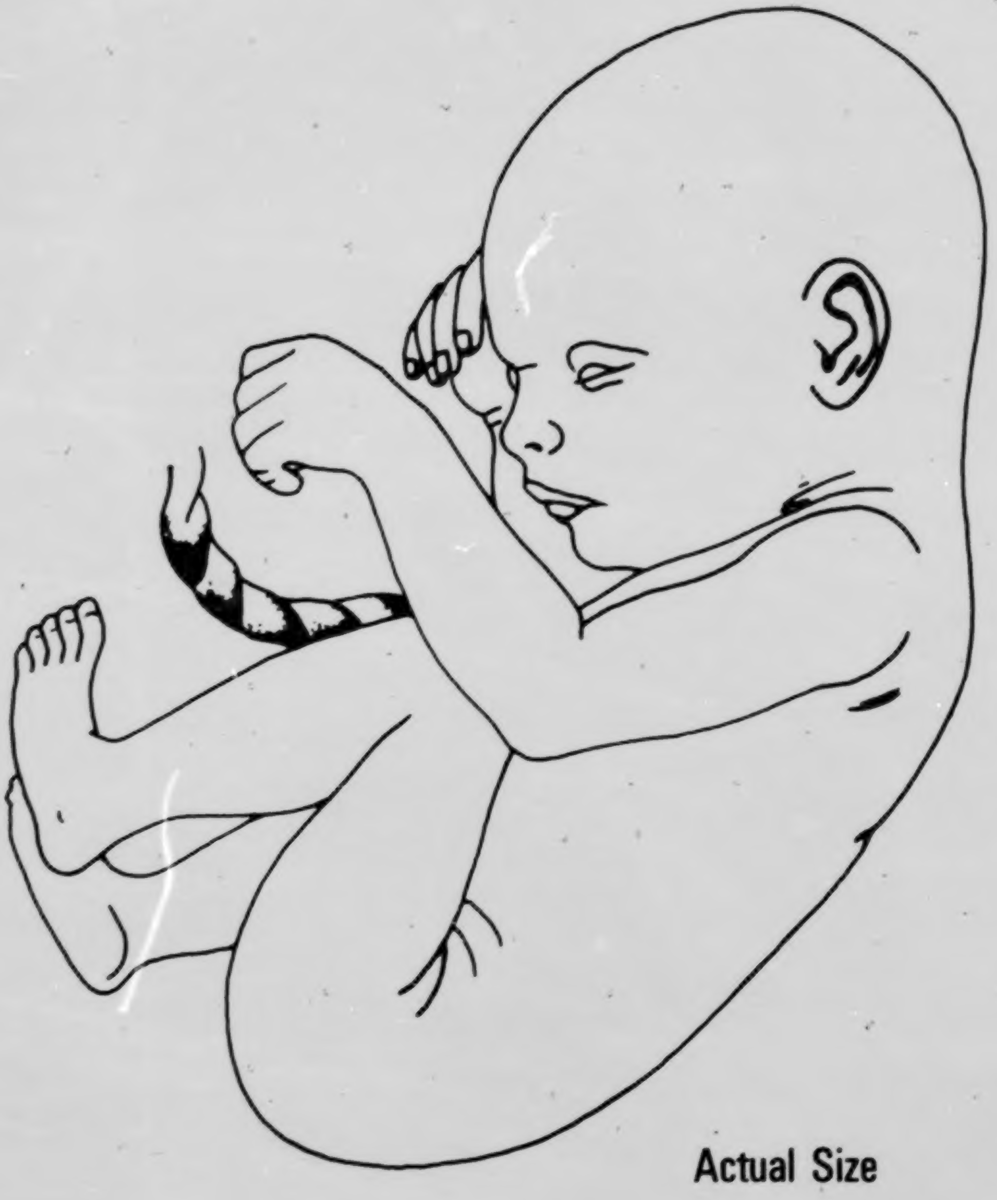


Two Months



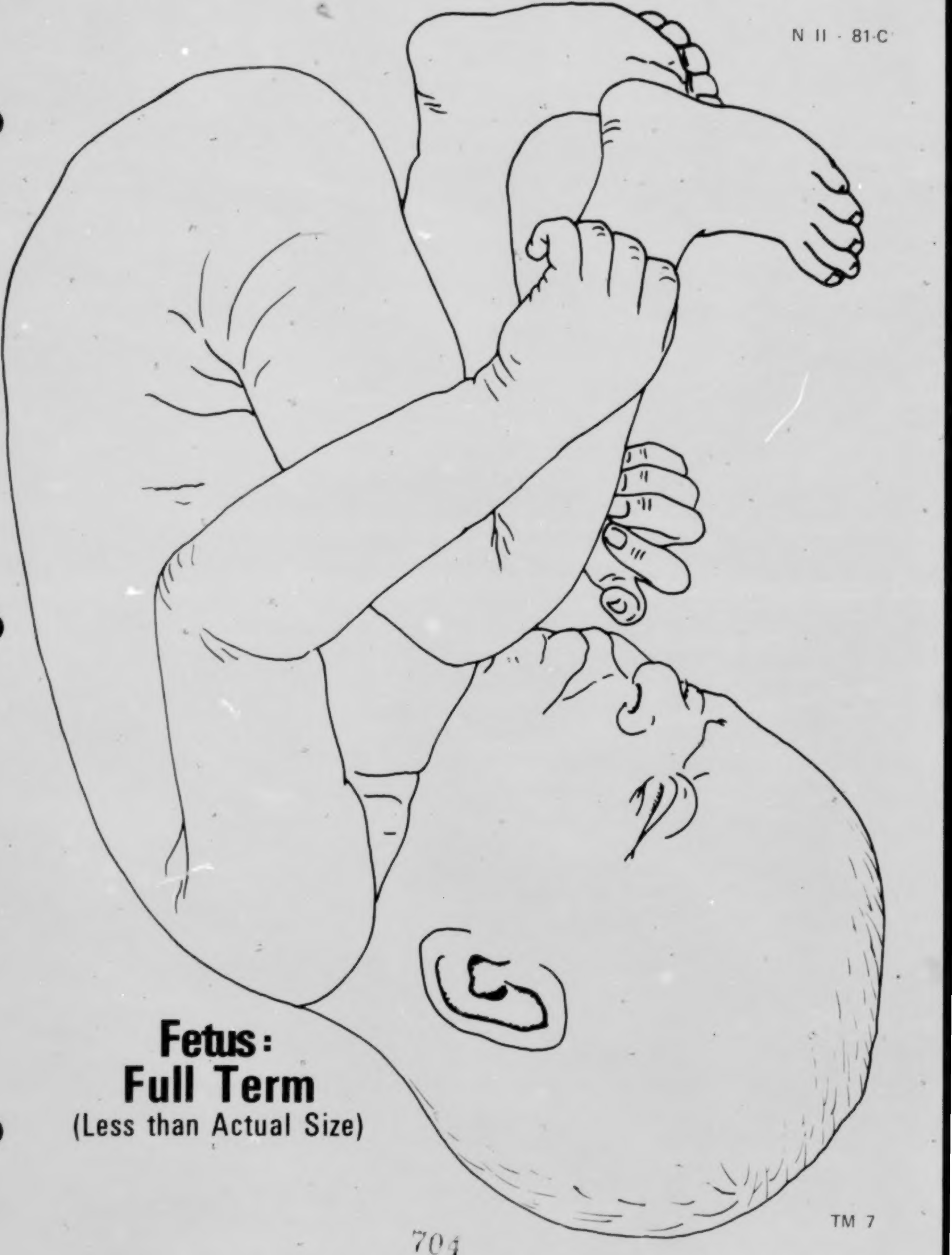
Three Months

Fetus:
Fifth and Sixth Months



Actual Size

N II · 81-C

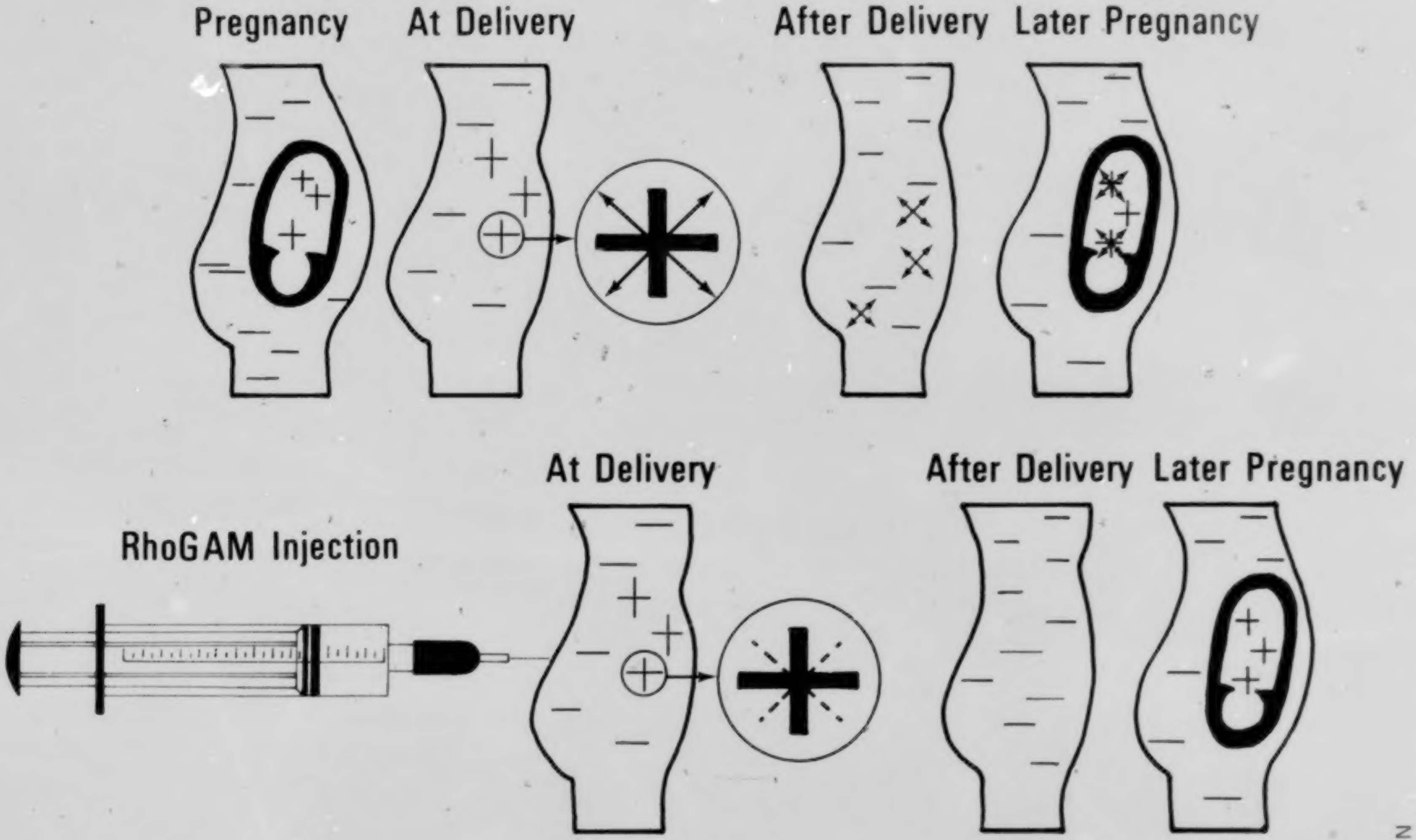


Fetus: Full Term

(Less than Actual Size)

TM 7

Maternal Sensitization to Rh Factor


Pregnancy
At Delivery
After Delivery
Later Pregnancy
RhoGAM Injection
At Delivery
After Delivery
Later Pregnancy

Given after delivery of each Rh positive infant or miscarriage.

PREGNANCY AND PRENATAL CARE
UNIT II

TEST

1. Match the terms on the right to the correct definitions. (The answers for "a" through "k" are on this page.)

______a. Placenta which is implanted in the lower portion of the uterus

______b. Implantation of the fertilized ovum outside the uterine cavity

______c. Nausea and vomiting usually in the early part of the day, occurring in the first months of pregnancy

______d. Before delivery; antepartum

______e. Vein which has become abnormally dilated and tortuous because of interference with venous drainage or weakness of the walls

______f. Stage or period of three months of a pregnancy

______g. Dark pigmented line often present in pregnant women and extending from the pubes upward in the midline

______h. White, shiny, slightly depressed lines on the abdomen, breasts, or thighs following prolonged stretching of the skin; stretch marks

______i. Transparent, almost colorless fluid contained in the amnion and composed of albumin, urea, creatinine, water, and various salts

______j. Softening of the lower segment of the uterus during the second and third months of pregnancy

______k. Pathological condition sometimes occurring in the last half of pregnancy with symptoms of hypertension, edema, proteinuria, sodium retention, and convulsions or coma

1. Striae
2. Trimester
3. Linea nigra
4. Morning sickness
5. Toxemia
6. Hegar's sign
7. Placenta previa
8. Prenatal
9. Ectopic pregnancy
10. Varicosity
11. Amniotic fluid

(The answers for "l" through "x" are on this page.)

______l. Varices in the lower rectal or anal wall

______m. Innermost of the fetal membranes forming a fluid-filled sac for the protection of the embryo

______n. Premature separation of the placenta before labor or delivery

______o. Blood-tinged mucus discharged from the vagina before or during labor

______p. Outermost fetal membrane which surrounds the amnion

______q. Form of childbirth in which psychological, physiological, and emotional aspects are emphasized in order to educate the patient for labor and, when possible, to reduce or eliminate the use of drugs

______r. Prolonged and excessive vomiting in pregnancy

______s. Mechanical defect in the cervix causing dilatation and effacement in early pregnancy

______t. Brownish pigmentation of the face during pregnancy

______u. Expansion of an orifice or opening

______v. Descent of the fetal head into the pelvic inlet

______w. Gradual flattening of the cervix during labor

______x. Softening of the cervix of the uterus which usually occurs about the time of the second missed menstrual period

12. Dilatation
13. Lightening
14. Prepared childbirth
15. Effacement
16. Amnion
17. Goodell's sign
18. Chloasma gravidarum
19. Hyperemesis gravidarum
20. Placenta abruptio
21. Hemorrhoid
22. Incompetent cervical os
23. Bloody show
24. Chorion

(The answers for "y" through "cc" are on this page.)

_____y. Excessive volume of amniotic fluid

_____z. Any deviation from the usual or normal

____aa. Transformation of all or part of the placenta into grape-like cysts with rapid growth of the uterus and with hemorrhage

____bb. Dark blue discoloration of the vaginal mucous membrane

____cc. Transabdominal puncture of the amniotic sac to obtain a sample of amniotic fluid

25. Chadwick's sign
26. Amniocentesis
27. Anomaly
28. Hydatid mole
29. Hydramnios

2. List signs and symptoms of pregnancy.

   a. Presumptive

   b. Probable

   c. Positive

3. State Naegele's rule for determining the estimated date of confinement or the estimated date of delivery.

4. Discuss sex determination and heredity.

5. Describe physiological changes that occur during pregnancy.

   a. Digestive system

   b. Metabolism

   c. Weight gain

d. Endocrine system

e. Cardiovascular and respiratory systems

f. Genitals

g. Integumentary system

h. Breasts

i. Urinary system

j. Musculoskeletal system

6. Discuss the placenta.

   a. Functions

   b. Development

   c. Description

d. Umbilical cord

7. Describe embryonic and fetal growth.

a. Period of the ovum

b. Period of the embryo

c. Period of the fetus

8. Describe fetal circulation, telling how it differs from postnatal circulation.

9. Describe care during pregnancy.

   a. Sleep, rest, and exercise

   b. Bowel habits

c. Breasts

d. Medical care

e. Clothing

f. Nutrition

g. Teeth

h. Cleanliness

10. Discuss preparation, advantages, and disadvantages of using hypnosis during pregnancy and childbirth.

a. Preparation

b. Advantages

c. Disadvantages

11. Discuss preparation, advantages, and disadvantages of prepared childbirth.

a. Preparation

b. Advantages

c. Disadvantages

12. Discuss causes and treatments of minor discomforts during pregnancy.

a. Constipation

b. Backache

c. Vaginal discharge

d. Leg cramps

e. Shortness of breath

f. Gingivitis

g. Hemorrhoids

h. Dependent edema

i. Varicosities in legs, groin, and/or vulva

j. Morning sickness, heartburn, or indigestion

k. Striae

l. Physiologic edema

13. Discuss causes and treatments of complications of pregnancy.

    a. Toxemias of pregnancy

    b. Blood incompatibilities

    c. Incompetent cervical os

d. Hemorrhage

e. Hyperemesis gravidarum

14. Discuss the effects and treatments of diseases that may affect the mother and/or the fetus.

    a. Syphilis

b. Tuberculosis

c. Rubella, three day or German measles

d. Cardiac disease

e. Diabetes mellitus

f. Gonorrhea

15. List symptoms, effects, causes, and treatment of nutritional anemia.

a. Symptoms

b. Effects

c. Causes

d. Treatment

16. List six signs and symptoms of labor.

a.

b.

c.

d.

e.

f.

PREGNANCY AND PRENATAL CARE
UNIT II

ANSWERS TO TEST

1.
    a. 7
    b. 9
    c. 4
    d. 8
    e. 10
    f. 2
    g. 3
    h. 1
    i. 11
    j. 6
    k. 5
    l. 21
    m. 16
    n. 20
    o. 23
    p. 24
    q. 14
    r. 19
    s. 22
    t. 18
    u. 12
    v. 13
    w. 15
    x. 17
    y. 29
    z. 27
    aa. 28
    bb. 25
    cc. 26

2.
    a. Presumptive
        1) Amenorrhea
        2) Morning sickness
        3) Frequent urination
        4) Tenderness and fullness of the breasts
    b. Probable
        1) Enlargement of the abdomen
        2) Changes in the uterus and cervix
        3) Positive pregnancy test
        4) Linea nigra in first pregnancy
    c. Positive
        1) Fetal heart sounds
        2) Fetal movements felt by an examiner
        3) X-ray showing the fetal skeleton

3. Count back three calendar months from the first day of the last menstrual period and add seven days

4. Discussion should include:

   a. Each mature ovum and sperm has twenty-three chromosomes

   b. Each chromosome is composed of an unknown number of genes, the units which transmit hereditary characteristics

   c. Only one of the twenty-three chromosomes determines sex

      1) Female ovum carries only one type of chromosome to determine sex, X

      2) Male spermatozoon may carry either one of two sex chromosomes, X or Y

      3) When the ovum unites with a sperm cell carrying an X chromosome, the baby will be a girl; if the sperm cell contains a Y chromosome, the baby will be a boy

   d. Chromosomal abnormalities may occur when

      1) Chromosomes divide unevenly with too much or too little material transmitted

      2) Chromosomes break and parts of two chromosomes unite to form crossover of material

   e. Transmission of too many or too few chromosomes or incomplete chromosomes results in congenital malformation

   f. A large percentage of abnormal fetuses are expelled by spontaneous abortions; approximately 3 to 5 percent of all live births are infants who have survived to full term with congenital malformation

   g. Some genetic disorders cause little difficulty; others may be severe handicaps

5. Description should include:

   a. Digestive system

      1) Stomach and intestines are displaced upward

      2) Tone and motility of tract and secretion of stomach acid and pepsin decrease, digestive process becomes slower, and constipation occurs frequently

   b. Metabolism--Gradually increases to provide for the growing fetus and the necessary energy to carry the increasing load

c. Weight gain--Average gain of twenty pounds

    1) Growth of fetus, placenta, amniotic fluid, and uterus accounts for thirteen to fourteen pounds

    2) Remainder of weight gain is from the increase in blood and extracellular fluid

d. Endocrine system

    1) Glands increase in size and activity

    2) Metabolism rate gradually increases as much as twenty-five percent

e. Cardiovascular and respiratory systems

    1) Blood volume increases to supply the fetus

    2) Blood pressure remains about the same as before pregnancy

    3) Heart and lungs are gradually displaced upward by growing fetus

    4) Pulse and respiratory rates increase

    5) Blood becomes richer in protein

f. Genitals

    1) Uterus increases greatly in size from a solid organ to a thin-walled muscular sac; additional weight of uterus and fetus causes strain on muscles and ligaments of back

    2) Cervix softens early in pregnancy

    3) Vaginal mucosa thickens; vaginal muscles hypertrophy

    4) Perineal skin and muscles hypertrophy; connective tissue loosens

g. Integumentary system

    1) Striae appear on breasts, abdomen, thighs, and buttocks

    2) Pigmentation may increase

        a. On the face--Chloasma gravidarum

        b. On the abdomen--Linea nigra

h. Breasts

1) Blood vessels and secreting glands enlarge, producing a sensation of fullness

2) Breasts, nipples, and areola enlarge and become more pigmented

3) Breasts may tingle

i. Urinary system

1) Kidneys must increase output

2) Frequency of urination occurs in the first and third trimesters due to increased pressure on the bladder

3) Adequate fluid intake is essential to maintain kidney function and bladder tone

j. Musculoskeletal system

1) Symphysis pubis separates

2) Lordosis increases due to weight increase

3) Hip joints separate, resulting in wider pelvic girdle

4) Pendulous abdomen may require additional support

6. Discussion should include:

a. Functions

1) Connects fetus to uterine wall

2) Provides for nutrition, excretion, and respiration of the fetus

3) Secretes hormones

a) Progesterone to inhibit uterine contractions and aid in maintaining pregnancy

b) Estrogen to aid in growth and development of the fetus and lactation

4) Acts as protective barrier to prevent some drugs and harmful organisms from entering the fetal circulation

b. Development

1) Fingerlike projections from the chorion of the fertilized ovum penetrate the uterine wall to provide nourishment for the fertilized ovum

2) Full development is reached by the twelfth week of the pregnancy

c. Description

1) This dark red, circular organ is about eight inches in diameter and one to one and one-half inches thick

2) Weight is approximately one pound

3) Fetal side is smooth and glistening with blood vessels clearly visible

4) Maternal side is irregularly rough and composed of many small lobes called cotyledons

d. Umbilical cord

1) Composed of two arteries and one vein intertwined and covered by a soft jellylike substance called Wharton's jelly

2) Attaches to the center of the placenta and enters the fetus at approximately the center of the abdominal wall

7. Dicussion should include:

a. Period of the ovum

1) Union to thirty hours--Mature ovum and sperm, each with twenty-three chromosomes, unite to produce a fertilized ovum with forty-six chromosomes

2) Thirty hours to third day--Fertilized ovum, called a zygote, begins to divide rapidly forming two cells, then four cells, eight cells, and so on

3) Fourth day--Cells continue to divide to form a hollow ball with an inner and outer layer of cells

4) Fifth to seventh day--Outer layer of cells sends out projections which will develop into the placenta and become implanted into the uterine wall

b. Period of the embryo--To eighth week

1) Cell division and growth continue

2) Inner layer of cells divides into three distinct layers which begin the formation of specific structures of the body

3) Embryo is about one-fourth inch long

4) Heart develops

c. Period of the fetus--Ninth week to birth

   1) Head becomes prominent with recognizable features; fetus about one inch long by the second lunar month

   2) Bones, baby teeth, fingers, and toes begin to form; sex can be determined by the third lunar month

   3) Fetus grows to six inches in length and four ounces in weight by the fourth month

   4) Fetal heart becomes audible and mother feels movement by the fifth month

   5) Fetus resembles miniature baby by the sixth lunar month; considered viable but usually will not survive if delivered

   6) Fetus weighs two and one-half pounds by the end of seventh lunar month; better chance for survival

   7) Body begins to fill out with subcutaneous layer of fat; weighs about six pounds by the eighth lunar month; chance of survival is very good

   8) Length of term varies from 240 to 300 days; usual length is 280 days or 10 months or 40 weeks

8. Description should include:

   a. Umbilical arteries carry the blood loaded with carbon dioxide and waste products to the placenta

   b. Oxygenated blood is carried to the fetus from the placenta through the single umbilical vein

   c. Blood enters the fetal circulation through the ductus venosus, which passes directly through the liver and empties into the vena cava

   d. From the vena cava most of the blood passes from the right atrium through an opening, the foramen ovale, into the left atrium and into the aorta

   e. The remainder of the blood passes through the right ventricle, into the pulmonary artery, and then through a vessel called the ductus arteriosus into the aorta

   f. With the blood flowing through these three special structures, the ductus venosus, foramen ovale, and ductus arteriosus, only a very small amount of blood flows through the liver and the lungs

   g. The functions of the liver and the lungs of the fetus are performed by the mother's liver and lungs

   h. After birth all three of the special structures close and the blood flows through the liver and the lungs as in an adult

9. Description should include:

   a. Sleep, rest, and exercise

      1) Usual activities are permitted with more frequent periods for resting because of increasing metabolism

      2) Exercise preserves muscle strength and tone; special exercises to aid in labor and delivery are taught in prepared childbirth classes

      3) Body alignment changes as center of gravity changes; special exercises assist in pelvic realignment

      4) Prolonged sitting increases pooling of blood in the legs and should be avoided

      5) Strenuous activities and heavy lifting should be avoided in the last trimester

   b. Bowel habits

      1) Reduced activity and expanding uterus increase tendency to constipation

      2) Obstipation or constipation should be treated with

         a) Adequate fluid intake

         b) Increased intake of fruits and vegetables

      3) Laxatives should be used only as prescribed

   c. Breasts

      1) Well-fitted support is important as weight and size increase

      2) Nipples should be cleaned daily and lanolin or cream applied as needed to prevent irritation or cracking

      3) Drying nipples with a rough towel in the last trimester will help toughen them in preparation for breast-feeding

   d. Medical care

      1) Physical examination including

         a) History and general physical

         b) Pelvic evaluation including measurements, size, and shape

         c) Vaginal examination with Pap smear and check for gonorrhea

            d) Breast examination

            e) Laboratory tests including urinalysis, VD tests, complete blood count, blood type, and Rh factor

        2) Early and regular physical checkups with urinalysis, weight determination, blood pressure reading, and breast examination; during last trimester vaginal examination is done to determine condition of cervix and position and presentation of fetus

    e. Clothing

        1) Nonrestricting to prevent interference with circulation

        2) Low-heeled shoes to assist in maintaining balance

        3) Abdominal support as needed in latter part of pregnancy

    f. Nutrition

        1) Proper diet based on the basic four food groups

        2) Increased caloric intake of approximately 200 calories per day with emphasis on increased protein rather than fats or carbohydrates

        3) Vitamin/mineral supplements as prescribed

        4) Increased intake of liquids

    g. Teeth

        1) Early and regular dental checkups with necessary treatment

        2) Maintenance of good dental care needed because of increased bacterial growth in mouth during pregnancy

    h. Cleanliness

        1) Tub baths are usually permitted until the membranes rupture

        2) Increased activity of skin glands and increased vaginal discharge may necessitate more frequent bathing

        3) Internal vaginal douching is prohibited

        4) Striae may be massaged with skin cream

10. Discussion should include:

    a. Preparation

        1) Education of the expectant mother in the aspects of hypnotism is begun about the third month of pregnancy

2) Exercises in relaxation, techniques of breathing, and muscle use are practiced by the mother-to-be; exercises are usually more effective when performed in a group training class

3) Therapist reassures and encourages the expectant mother throughout the pregnancy and during labor

4) Sedation, analgesia, and anesthetic may be used to supplement hypnosis

b. Advantages

1) Less medication is required

2) Patient is awake and cooperative during the birth process

3) Hypnotic and posthypnotic suggestions help to alleviate suffering and depression

c. Disadvantages

1) Much advance preparation and planning is required

2) Patient is in a suggestive state so great care is needed in what is said in patient's hearing

11. Discussion should include:

a. Preparation includes

1) Education about pregnancy and childbirth to dispel fears and misapprehensions

2) Exercises to strengthen and increase flexibility of muscles used in labor

a) Pelvic rocking

b) Tailor sitting

c) Squatting and kneeling

3) Methods of completely relaxing muscles

4) Conditioning for labor and delivery with instruction concerning breathing and proper use of muscles

5) Involvement of father-to-be as helper throughout pregnancy and labor

b. Advantages

1) Decreases use of analgesia and anesthesia and possibilities of side effects in mother and infant

2) Increases maternal and paternal relationship by allowing both parents to participate in birth process

3) Reduces fear and anxiety through knowledge and understanding

4) Lessens difficulties in neonate

c. Disadvantages

1) Requires additional time for personnel and prospective parents for adequate preparation

2) May not be effective for some people

3) Should be used only for those undergoing normal labor and delivery

4) Necessitates having a prepared coach throughout labor

12. Discussion should include:

a. Constipation

1) Causes

a) Diminished gastric motility

b) Pressure of uterus on intestines

2) Treatment

a) Adequate fluid intake

b) Increased intake of fruit, vegetables, and other foods containing cellulose

c) Physical activity such as walking

d) Mild laxative or enema only as prescribed

b. Backache

1) Causes

a) Change of posture and balance

b) Additional weight of pregnancy

- c) Remaining in one position too long
- d) Poor body mechanics

2) Treatment

- a) Change of position or activity
- b) Prescribed exercises
- c) Support with girdle or corset

c. Vaginal discharge

1) Causes

- a) Natural increase of secretions of vaginal and cervical glands
- b) Infection such as Monilia or Trichomonas
- c) Cervical erosion

2) Treatment

- a) More frequent bathing with particular attention to vaginal and perineal area
- b) Treatment of infection as prescribed

d. Leg cramps

1) Causes

- a) Excess of phosphorous accumulated in the body
- b) Pressure of uterus on nerves and blood vessels supplying the lower extremities
- c) Ingestion of too much or too little milk
- d) Fatigue

2) Treatment

- a) Calcium lactate, calcium gluconate, or vitamin B supplements as prescribed
- b) Pressure on toes to force them upward and to straighten knee

e. Shortness of breath

1) Causes

- a) Pressure of uterus on the diaphragm or descending aorta
- b) Supine position during latter half of pregnancy

2) Treatment

a) Change of position from supine to Sims'

b) Elevation of upper part of body for sleep and rest

c) Relief is obtained when lightening and/or delivery occur

f. Gingivitis

1) Cause--Deficiency of vitamin C, ascorbic acid

2) Treatment

a) Increased intake of vitamin C

b) Astringent mouthwash

g. Hemorrhoids

1) Causes

a) Constipation

b) Increased pressure of uterus

2) Treatment

a) Regular bowel habits

b) Sitz baths as prescribed

c) Application of analgesic ointments or use of suppositories as prescribed

h. Dependent edema

1) Causes

a) Decreased circulatory efficiency in feet and legs in advanced pregnancy

b) Increased pressure on groin and lower body

2) Treatment

a) Change position

b) Elevate legs

i. Varicosities in legs, groin, and/or vulva
  1) Causes
    a) Increased abdominal pressure
    b) Prolonged standing
    c) Tight clothing and/or round garters
    d) Familial tendency
  2) Treatment
    a) No tight clothing or round garters
    b) Frequent change of position
    c) Elevation of the legs periodically above the level of the pelvis
    d) Elastic bandage or support hose applied before getting out of bed
    e) Avoidance of constipation

j. Morning sickness, heartburn, or indigestion
  1) Causes
    a) Diminished gastric secretions and motility
    b) Physiologic changes due to pregnancy
    c) Emotional reaction
  2) Treatment
    a) Frequent small meals
    b) Dry food eaten before arising
    c) Medication such as antacids

k. Striae
  1) Cause--Stretching and rupturing of internal tissues
  2) Treatment
    a) Exercise
    b) Massage of affected skin with lotion

l. Physiologic edema

1) Causes

a) Increased fluid in circulatory system

b) Toxemia

2) Treatment

a) Limit salt intake

b) Notify doctor immediately

13. Discussion should include:

a. Toxemias of pregnancy--Pre-eclampsia and eclampsia

1) Cause--Unknown

2) Predisposing factors

a) Poor nutrition

b) Inadequate protein intake

c) Excessive weight gain

d) Hypertension

e) Diabetes

f) History of toxemia in patient or family

3) Treatment and nursing responsibilities

a) Prevention by

(1) Early and continued prenatal care

(2) Early observation for symptoms

(3) Limited weight gain

(4) Restricted sodium intake; administration of diuretics

(5) Increased rest and quiet

(6) Medication as needed to lower blood pressure

(7) Increased fluid intake

(8) Restricted food intake as indicated

(9) Close observation for further complications until after delivery

(10) Sedatives neither restricted nor forced

(11) Protection in the event of convulsions

(12) Termination of pregnancy if condition persists

b. Blood incompatiblities

1) Rh factor

a) Cause

(1) Rh negative mother conceives baby with Rh positive father

(2) Rh positive gene is dominant

(3) Sensitization of the mother to Rh factor may occur during labor and delivery of first baby or may result from receiving a transfusion with Rh positive blood

(4) After sensitization mother begins producing antibodies

(5) During subsequent pregnancies, antibodies from the mother cross the placental barrier and cause destruction of the red blood cells in the fetus

b) Treatment

(1) Development of antibodies can be prevented by the administration of anti-Rh globulin within seventy-two hours following delivery

(2) An amniocentesis may be done to determine if sensitization has occurred; an intrauterine fetal transfusion may be performed if indicated

2) ABO incompatibility

   a) Cause

      (1) Mother with type O blood conceives baby with a father with type A, B, or AB

      (2) Blood cells of fetus hemolyze due to maternal antibodies but reaction is usually less severe than Rh incompatibility

      (3) Condition can occur in firstborn but does not increase in severity in subsequent pregnancies

   b) Treatment of mother is not needed

c. Incompetent cervical os

   1) Cause--Unknown but may be due to trauma

   2) Treatment--Shirodkar operation or purse-string suture

d. Hemorrhage

   1) Causes

      a) Early in pregnancy

         (1) Abortion

         (2) Ectopic pregnancy

      b) Late in pregnancy

         (1) Placenta previa

         (2) Placenta abruptio

         (3) Hydatid mole

   2) Treatment and nursing responsibilities

      a) Observe vital signs

      b) Observe amount and character of bleeding

      c) Treat hemorrhage and shock as prescribed

      d) Save any expelled tissue for examination

      e) Observe aseptic technique to prevent infection

      f) Provide emotional support

e. Hyperemesis gravidarum

1) Causes--Exact cause unknown but condition may be due to

a) Hormonal changes

b) Maladjustment of maternal metabolism

c) Change in gastric motility

d) Toxicity

e) Anxiety and/or emotional problems

2) Treatment and nursing responsibilities

a) Adequate care of morning sickness may prevent condition

b) When hospitalization is required treat with

(1) Bed rest

(2) IV therapy

(3) Medication to relieve symptoms

(4) Accurate intake and output

(5) Emotional support

14. Discussion should include:

a. Syphilis

1) Effect

a) Active syphilis when not treated may cause abortion, premature delivery, or delivery of an infected baby

b) Placental transfer of the causative organism, Treponema pallidum, may occur after the fourth month of pregnancy

2) Treatment

a) Test for syphilis at beginning of pregnancy

b) Successful treatment will insure a healthy infant; treatment must be started before the eighteenth week of gestation

        - c) A syphilitic mother should not nurse her infant if she has been infected within two years prior to the birth

- b. Tuberculosis
    - 1) Effect
        - a) Disease is easily transmitted to the neonate; therefore, women with active tuberculosis should be advised to delay pregnancy
        - b) Long, hard labor may have an adverse effect
        - c) Pregnancy does not adversely affect tubercular patient but control of the disease is necessary
    - 2) Treatment
        - a) Instruction in self-care and preventive measures to be taken pertaining to the infant and others
        - b) Adequate rest and diet
        - c) Administration of anti-tubercular medications
        - d) Sedatives or narcotics as needed to keep patient comfortable and relaxed during labor
        - e) Isolation of mother during hospitalization to prevent spread of active disease; neonate should be kept away from the mother as long as transmission of disease is possible
- c. Rubella, three day or German measles
    - 1) Effect
        - a) May cause congenital anomalies if contracted during first trimester of pregnancy
        - b) May be spread from the affected neonate to others through contact
    - 2) Treatment
        - a) Pregnant woman should contact her physician immediately if exposed to rubella
        - b) All children should be immunized before puberty

- c) Pregnant women should be tested for rubella antibodies and those who are susceptible should be immunized a few days after delivery
- d) Mothers who contracted rubella during pregnancy as well as their infants should be isolated during hospitalization

d. Cardiac disease

- 1) Effect
  - a) Added strain of pregnancy may cause serious complications
  - b) Overexertion, colds, sore throat, and influenza may cause heart failure
  - c) More careful observation will be required throughout pregnancy, delivery, and puerperium
- 2) Treatment
  - a) Keep weight gain at a minimum
  - b) Prevent or treat anemia
  - c) Avoid exposure to infections and upper respiratory diseases
  - d) Avoid exertion such as carrying heavy objects, moving furniture, strenuous exercise, and climbing hills or stairs
  - e) Sleep at least eight to ten hours with frequent rest periods during the day
  - f) Reduce strain during labor and delivery through close observation and reducing discomforts as much as possible
  - g) Observe every fifteen minutes during first stage of labor for discomfort, pulse and respiratory rates, blood pressure, and dyspnea
  - h) Limit bearing down with contractions during second stage of labor to prevent fatigue
  - i) Administer oxygen as indicated
  - j) Observe carefully for signs of cardiac distress

e. Diabetes mellitus

- 1) Effect--Increased tendency toward complications
  - a) Toxemia
  - b) Premature labor

- c) Stillbirth
- d) Oversized infant
- e) Neonate mortality
- f) Congenital defects
- g) Hydramnios
- h) Hemorrhage

2) Treatment

- a) Instruction for self-care
- b) Rigid control and frequent adjustments of diet and insulin during pregnancy and puerperium
- c) Urine tests daily as instructed
- d) Low sodium diet as needed to decrease edema
- e) Early delivery except in cases of mild diabetes
- f) Close observation for signs of hypoglycemia, hyperglycemia, and acidosis
- g) Observation for uterine bleeding

f. Gonorrhea

1) Effect

- a) May be transmitted to the baby's eyes while passing through the vagina
- b) May cause blindness by scarring and fibrosis if untreated
- c) May spread to pelvic cavity before or after, but not during, a pregnancy
- d) May cause pelvic inflammatory disease which can result in sterility

2) Treatment

- a) Administer appropriate antibiotic
- b) Instill one percent silver nitrate or an antibiotic preparation in the eyes of all neonates

15. a. Symptoms
    1) Weakness
    2) Dyspnea
    3) Fatigability
    4) Pallor
    5) Low hemoglobin

    b. Effects
    1) Mother may be predisposed to postpartum infection
    2) Infant is predisposed to anemia

    c. Causes
    1) Iron-poor diet
    2) Increased requirements of fetus during last six weeks of gestation
    3) Mother's inability to assimilate iron

    d. Treatment
    1) Adequate diet with increased iron-rich foods such as green and yellow vegetables, egg yolks, yellow fruits, whole grain and enriched cereals, potatoes, tomatoes, molasses, nuts, raisins, and liver
    2) Iron preparations as prescribed

16. a. Lightening--May occur two to four weeks before term in primiparas; may not occur until after onset of labor in multiparas

    b. Bloody show

    c. Recurrent pains in back and/or abdomen

    d. Urinary frequency

    e. Rupture of membranes

    f. Uterine contractions which gradually increase in frequency, intensity, and duration

CARE OF THE PATIENT IN LABOR
UNIT III

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to describe the structures involved in labor, the stages of labor, and monitoring the fetal heart. The student should be able to discuss nursing responsibilities during labor and list maternal and fetal danger signs and factors related to complications of pregnancy. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with labor and delivery to the correct definitions.
2. List three possible reasons for the onset of labor.
3. Describe the structures involved in the labor process.
4. Compare true labor and false labor.
5. Match terms applied to the relationship between fetus and mother to the correct descriptions.
6. Describe the first stage of labor, including duration, characteristics of the three phases, and the rupture of membranes.
7. List the admitting procedures for the obstetrical patient.
8. Describe nursing responsibilities during stage one, including monitoring the fetal heart.
9. List eight maternal danger signals.
10. List three fetal danger signals.
11. List characteristics, causes, and treatments for complications of labor and delivery: primary inertia, secondary inertia, pathological retraction ring, abnormal positions of the fetus, prolapsed cord, and precipitate delivery.
12. List indications, contraindications, and nursing responsibilities for induction of labor.
13. Write an obstetrical care study.
14. Demonstrate the ability to:
    a. Perform perineal prep.
    b. Time obstetrical contractions.
    c. Check the fetal heart rate.

CARE OF THE PATIENT IN LABOR
UNIT III

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information sheet.

   C. Make transparencies.

   D. Discuss terminal and specific objectives.

   E. Discuss information and assignment sheets.

   F. Illustrate effacement and dilatation with a knitted uterus, sweater sleeve, or sock.

   G. Assist with assignment sheet.

   H. Demonstrate and discuss procedures outlined on the job sheets.

   I. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Complete assignment sheet.

   E. Demonstrate the ability to accomplish procedures outlined on the job sheets.

   F. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objective sheet

   B. Information sheet

C. Transparency masters

1. TM 1--Musculature of the Uterus

2. TM 2--Before Labor and Early Effacement

3. TM 3--Complete Effacement and Complete Dilatation

4. TM 4--Fetal Skull

5. TM 5--Breech Presentations

6. TM 6--Shoulder and Transverse Presentations

7. TM 7--Cephalic Presentations

8. TM 8--Cephalic Presentations in Pelvic Inlet

9. TM 9--Stations of Descent

10. TM 10--Cervical Dilatation

D. Assignment Sheet #1--Write an Obstetrical Care Study

E. Job sheets

1. Job Sheet #1--Perform Perineal Prep

2. Job Sheet #2--Time Obstetrical Contractions

3. Job Sheet #3--Check the Fetal Heart Rate

F. Test

G. Answers to test

II. References:

A. Bleier, Inge J. *Maternity Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1971.

B. Bleier, Inge J. *Workbook in Bedside Maternity Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1974.

C. Broadribb, Violet, and Charlotte Corliss. *Maternal-Child Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

D. Friesner, Arlyne, and Beverly Raff. *Obstetric Nursing.* Flushing, New York: Medical Examination Publishing Company, Inc., 1974.

E. Ingalls, A. Joy, and M. Constance Salerno. *Maternal and Child Health Nursing.* St. Louis, Missouri: The C. V. Mosby Company, 1971.

F. Lerch, Constance. *Maternity Nursing.* St. Louis, Missouri: C. V. Mosby Company, 1974.

III. Films:

A. "All My Babies." American Medical Association Film Library, 535 North Dearborn Street, Chicago, Illinois 60610.

(NOTE: The following films are available from Modern Talking Pictures, Inc., 1141 Slocum Street, Dallas, Texas 74201.)

B. "Modern Obstetrics: Normal Delivery." Ortho Pharmaceutical Corporation.

C. "Modern Obstetrics: Postpartum Hemorrhage." Ortho Pharmaceutical Corporation.

D. "Modern Obstetrics: Pre-eclampsia - Eclampsia." Ortho Pharmaceutical Corporation.

(NOTE: The following film is available from the Oklahoma State Department of Health for Oklahoma instructors.)

E. "Labor and Childbirth." Medical Films, Inc., 116 Natoma Street, San Francisco, California 94105.

CARE OF THE PATIENT IN LABOR
UNIT III

INFORMATION SHEET

I. Terms and definitions

A. Contractile--Having the power or tendency to contract

B. Molding--Conforming to a given shape, as the fetal head in its passage through the birth canal

C. Suture line--Line of junction or closure between bones, as in the skull

D. Presenting part--Part of the fetus that is palpated through the cervix at the beginning of labor; presentation

E. Attitude--Position assumed by the fetus in utero

F. Lie--Relationship of the spine of the fetus to the spine of the mother

G. Position--Relationship of the presenting part to the mother's pelvis

H. Station--Relationship of the presenting part to the level of the ischial spines

I. Vertex--Highest point of the skull; the crown

J. Mucous plug--Mass of thick, tenacious mucus which fills the cervix during pregnancy and is discharged at the beginning of labor

K. Amniotic sac--Amnion; bag of waters

L. Prolapse of the umbilical cord--Premature expulsion of the cord during parturition, prior to the delivery of the fetus

M. Amniotomy--Tearing or breaking of the fetal membranes; rupture of the membranes

(NOTE: This may be spontaneous or performed by the physician with an instrument and is characterized by a sudden gush of fluid from the vagina.)

N. Lanugo--Downlike hair that covers the fetus from about the fifth month of gestation

O. Vernix caseosa--Cheesy deposit on the surface of the fetus

P. Meconium--Pasty, greenish mass, consisting of mucus, epithelial cells, bile, lanugo, and vernix caseosa, that collects in the intestine of the fetus

Q. Precipitation--Sudden expulsion of the fetus without preparation for delivery

INFORMATION SHEET

R. Oxytoxic–Drug that hastens parturition

S. Boggy–Soft and spongy to palpation

T. Uterine inertia–Diminution or cessation of uterine contractions during labor

U. Disproportion–Abnormal size relationship between two objects

V. Cephalopelvic–Pertaining to the head of the fetus and the pelvis of the mother

II. Possible reasons for onset of labor

(NOTE: The exact cause is unknown.)

A. Diminished placental function

B. Distended uterus causing pressure on nerve and muscle fibers

C. Pressure causing stretching of cervix which stimulates uterine contractions

D. Decrease in uterine blood flow and hormone production causing irritation of the myometrium

III. Structures involved in the labor process

A. Pelvis

1. False

a. Location–Portion above the pelvic brim

b. Functions

1) Supports enlarging uterus during pregnancy

2) Helps direct fetal head into true pelvis

2. True

a. Location–Portion below the pelvic brim divided into the inlet or upper boundary, the cavity, and the outlet or lower boundary

b. Function–Articulations and ligaments expand to accommodate the fetus, particularly the skull

(NOTE: The nurse need not know the exact pelvic measurements of each patient but should understand the importance of an adequate pelvis in the birth process.)

INFORMATION SHEET

B. Uterus (Transparency 1)

1. Divisions
   - a. Upper segment--Muscles thick and contractile
   - b. Lower segment--Muscles thin and passive
   - c. Juncture--Braun's retraction ring
   - d. Cervix
2. Contractions
   - a. Upper segment contracts rhythmically
   - b. Lower segment gradually stretches
   - c. Contraction and stretching brings about the dilatation and effacement of the cervix (Transparencies 2 and 3)

C. Fetal skull (Transparency 4)

1. Bones are joined only by membranes at the suture lines
2. Incomplete ossification of fetal cranium permits molding of the bones to adapt to the birth canal
3. Molding may be extensive with the newborn's head misshapen
4. Newborn's head will usually resume its normal contour in a few days

IV. Comparison of true labor and false labor

True labor	False labor
A. Contractions regular and gradually intensify	A. Contractions irregular and disappear on lying down
B. Evidence of show	B. No show
C. Increased by activity	C. No change produced by activity
D. Descent of presenting part	D. Presenting part does not descend
E. Backache accompanies abdominal pain	E. Discomfort mainly in abdomen
F. Discomfort not relieved by mild sedation	F. Discomfort stops with medication
G. Cervix soft	G. Cervix firm

INFORMATION SHEET

V. Relationship of fetus and mother

- A. Types of presentations
    - 1. Cephalic--Any part of head presenting
    - 2. Breech--Buttocks presenting (Transparency 5)
        - a. Full or complete--Buttocks and feet presenting together
        - b. Frank--Buttocks presenting with legs extended and feet against the face
        - c. Footling--One or both feet presenting
    - 3. Shoulder--Shoulder or arm presenting (Transparency 6)
- B. Fetal position--Arms and legs flexed, fetus ovoid
- C. Lie (Transparency 6)
    - 1. Longitudinal--Spine of fetus parallel to spine of mother
    - 2. Transverse--Spine of fetus at right angle to spine of mother
- D. Position of head when presenting (Transparencies 7 and 8)
    - 1. Occiput anterior; OA--Back of head to symphysis pubis
    - 2. Left occiput anterior; LOA--Back of head to left of symphysis pubis
    - 3. Left occiput posterior; LOP--Back of head to left of sacrum
    - 4. Left occiput transverse; LOT--Back of head to left side
    - 5. Occiput posterior; OP--Back of head to sacrum
    - 6. Right occiput anterior; ROA--Back of head to right of symphysis pubis
    - 7. Right occiput posterior; ROP--Back of head to right of sacrum
    - 8. Right occiput transverse; ROT--Back of head to right side
- E. Stations of descent (Transparency 9)
    - 1. Floating--Presenting part freely movable above the inlet
    - 2. Dipping--Presenting part partially through the inlet

INFORMATION SHEET

3. Engaged–Largest diameter of presenting part through the inlet

4. Flexion–Chin flexed on chest with occiput presenting

   (NOTE: In this position the head is presented in its smallest diameter to the birth canal and therefore makes a relatively easy descent.)

5. Descent–Progress through birth canal measured by station

   (NOTE: Descent is expressed as follows:

   a. Head floating: –4
   b. Head moving toward ischial spines: –3, –2, –1
   c. Engagement, vertex level with ischial spines: 0
   d. Progressing toward pelvic floor: +1, +2, +3
   e. Vertex at perineum; crowning: +4.)

VI. First stage of labor–Begins with the onset of regular, pronounced contractions and lasts until the cervix is completely effaced and dilated

A. Duration

1. Primpara, 8-16 hours
2. Multipara, 2-10 hours

B. Characteristics of early phase

1. Contractions are slow, short, rhythmic
   a. Frequency–Every 5 to 20 minutes
   b. Duration–30 to 50 seconds
2. Discomfort radiates from lumbar area to anterior abdomen
3. Cervix dilates to 3 cm

C. Characteristics of mid or active phase

1. Contractions increase in frequency, duration, and intensity
   a. Frequency–Every 2 to 4 minutes
   b. Duration–45 to 60 seconds
2. Cervix dilates to 8 cm

INFORMATION SHEET

- D. Characteristics of transition or end of stage one
  - 1. Contractions become longer and more intense
    - a. Frequency--Every 1 1/2 to 3 minutes
    - b. Duration--60 to 90 seconds
  - 2. Cervix is completely dilated, 8 to 10 cm
- E. Rupture of membranes
  - 1. This may occur any time during labor
  - 2. Prolapse of umbilical cord may follow premature rupture

VII. Admitting the obstetrical patient

- A. Identify patient properly
- B. Explain hospital procedure and techniques
- C. Check vital signs including fetal heart rate
- D. Notify doctor of admission; provide him with vital signs, fetal heart rate, and status of labor
- E. Give enema and do vaginal prep as prescribed
- F. Obtain history
  - 1. Medical history
  - 2. Obstetrical status; para number and gravida number
  - 3. Symptoms of labor including presence of show, rupture of membranes, character and duration of contractions
  - 4. Any allergies
  - 5. Mother's knowledge of childbirth, any special preparation, and previous complications
  - 6. Presence of current family illness
  - 7. Time of last meal
  - 8. Plans for breast or bottle feeding

INFORMATION SHEET

9. Any physical problems or disabilities

10. Blood type and incompatibilities

G. Physical examination including assessment of obstetrical status

VIII. Nursing responsibilities during stage one

A. Maintain aseptic technique to avoid introducing pathogens into the vaginal canal

B. Protect patient from physical harm

1. Assist patient to get in and out of bed

2. Use side rails after sedation

C. Monitor progress and condition

1. Take vital signs at prescribed intervals

2. Determine frequency, intensity, and duration of contractions

3. Observe vaginal discharge

D. Check contour and size of abdomen for

1. Fetal movements

2. Bladder distention

E. Provide food and fluids as prescribed

F. Provide for comfort

1. Change position frequently

(NOTE: When the woman in labor is in the supine position, hypotension may result from pressure on the inferior vena cava. Assisting her to the lateral or Sims' position will relieve such pressure.)

2. Ambulate if possible until membranes rupture

3. Provide mouth care frequently

4. Keep patient clean and dry

5. Omit perineal pads during labor

INFORMATION SHEET

G. Monitor closely after membranes rupture for

   1. Amount of discharge

   2. Bleeding

   3. Meconium staining

      (NOTE: Meconium-stained amniotic fluid in the cephalic presentation may be considered a sign of fetal distress, the reaction of the fetus to lack of oxygen. Such staining in a breech presentation is usually not considered significant. In either case it should be reported to the physician.)

   4. Fetal heart for distress

(NOTE: If the state of the membranes cannot be determined accurately, the nurse may check the pH of the vaginal drainage. Normal vaginal secretions are slightly acid, in the 4.5 to 5.5 range on the pH scale; amniotic fluid is basic, in the 7 to 7.5 range. A sterile applicator is inserted gently into the vaginal canal, withdrawn, and applied to Nitrazine paper. If the membranes are intact, the paper will turn yellow to olive green; if membranes are ruptured, the paper will turn blue green to deep blue.)

H. Administer medication as prescribed

I. Provide emotional support

   1. Encourage verbalization concerning preparation for labor and delivery including her fears and feelings

   2. Explain procedures and labor process

   3. Stay with the patient as much as possible; leave her only for very short periods of time

   4. Permit the person of her choice to remain with the patient throughout her labor

   5. Provide physical support by touching the patient and massaging her back and abdomen as indicated to relieve distress

   6. Assist with breathing exercises and relaxation techniques to help reduce pain and tension

   7. Reassure and encourage patient as labor progresses

INFORMATION SHEET

8. Provide privacy and avoid unnecessary exposure

J. Monitor fetal heart

1. Check frequently to assess any changes in fetal condition

    a. Normal rate is 120 to 160 per minute

    b. Rate slows during contraction

    c. Rate increases between contractions

2. Report immediately if rate is below 100 or above 160; abnormal rate indicates fetal distress

3. Determine location of fetal heart--Fetal heart tone will move from side to side and down as fetus rotates and descends

    a. Cephalic presentation--May be heard in lower abdominal quadrants

    b. Breech presentation--May be heard in upper abdominal quadrants

IX. Maternal danger signals

A. Elevation of temperature with or without chills

B. Change in pulse rate

C. Deviation in blood pressure

D. Change in tone and contour of the uterus which may indicate impending rupture

E. Sudden hard contraction followed by cessation of contractions and accompanied by acute abdominal pain and signs of shock

(NOTE: These are symptoms of rupture of the uterus.)

F. Excessive vomiting

G. Hyperventilation which disrupts normal oxygen and carbon dioxide exchange

H. Supine hypotension syndrome which produces symptoms similar to shock and may decrease fetal heart rate

INFORMATION SHEET

  - I. Pallor, cyanosis, or signs of cardiac distress
  - J. Vaginal bleeding
  - K. Headache, dizziness, epigastric pain, spots before the eyes, edema of hands or face
  - L. Convulsions

X. Fetal danger signals

  - A. Deviations in fetal heart rate
  - B. Passage of meconium
  - C. Fetal hyperactivity which indicates diminished oxygen supply
  - D. Prolapse of the cord

XI. Complications of labor and delivery and their characteristics, causes, and treatment

  - A. Primary inertia
    - 1. Characteristics
      - a. It occurs in early phase of stage one
      - b. Contractions are weak, uncoordinated, but painful
      - c. Labor does not progress
    - 2. Causes
      - a. Muscle weakness and/or nerve defects
      - b. Overdistention of the uterus due to multiple births or hydramnios
      - c. Emotional stress
      - d. Rigid, uneffaced cervix, usually in an older primipara
      - e. Too early sedation
    - 3. Treatment
      - a. Rest and sedation
      - b. Oxytocics after a period of rest

INFORMATION SHEET

        c. Enema after rest period
        d. Hydration as needed
        e. Ambulation as permitted

B. Secondary inertia

  1. Characteristics
    a. It occurs during mid or active phase of stage one
    b. Contractions are weak but coordinated and not too painful
  2. Causes
    a. Overdistention of uterus
    b. Bladder or bowel distention
    c. Weak abdominal muscles
    d. Emotional stress
    e. Cervical rigidity
    f. Fatigue
    g. Pelvic disproportion
    h. Poor position of fetus
  3. Treatment
    a. Evaluation for disproportion or poor position; cesarean section may be indicated
    b. Oxytocics if no abnormality is detected
    c. Amniotomy if indicated
    d. IV fluids to prevent dehydration
    e. Continuous emotional support and encouragement
    f. Provision for rest and comfort

INFORMATION SHEET

C. Pathological retraction ring or Bandl's ring

(NOTE: This may indicate impending rupture of the uterus.)

1. Characteristics
    a. Over-stretching of lower segment of uterus with thickening of muscles of upper segment
    b. Retraction ring elevated to level of umbilicus
    c. Strong contractions with bearing down but no progress
    d. Rapid pulse and panting respirations
    e. Extreme pain
2. Causes
    a. Improper use of sedatives
    b. Disproportion of pelvis and/or fetus
    c. Abnormal presentation
    d. Prolonged labor
    e. Traumatic delivery
    f. Scar from previous cesarean section or uterine surgery
3. Treatment
    a. Notify physician of difficulties immediately
    b. Cesarean section usually performed immediately

    (NOTE: Rupture of the uterus is a serious complication which occurs about 1 per 2000 deliveries. It is usually fatal to the infant and about one-third of the affected mothers.)

D. Abnormal positions of fetus

1. Characteristics
    a. Contractions felt primarily in the back, causing almost continuous back pain
    b. Early rupture of membranes

INFORMATION SHEET

        c. Frequent and irregular contractions
        d. Presenting part remains high during labor
    2. Causes
        a. Premature labor
        b. Short umbilical cord
        c. Disproportionate pelvis
        d. Placenta placed low
    3. Treatment
        a. Manual rotation of fetus to better position
        b. Back massage and positioning to relieve pain
        c. Forceps delivery
        d. Cesarean section

E. Prolapsed cord
    1. Characteristic--Umbilical cord visible or protruding from vagina
    2. Causes
        a. Premature rupture of membranes before presenting part begins descent
        b. More frequent when presenting part is other than cephalic
        c. Long cord
        d. Low placed placenta
        e. Hydramnios
        f. Premature labor
    3. Prevention
        a. Bed rest after rupture of membranes
        b. Delay of amniotomy until head is engaged

INFORMATION SHEET

4. Treatment
    a. Trendelenberg or knee-chest position
    b. Application of sterile moist dressings to protect cord
    c. Immediate delivery or cesarean section as indicated

F. Precipitate labor and delivery

(NOTE: This may be called precipitation.)

1. Characteristics
    a. Labor short, progresses rapidly
    b. Occurrance usually in multipara
2. Causes
    a. Relaxed cervix
    b. Previous rapid delivery
    c. Small fetus
    d. Multiple birth
    e. Inattention to signs and symptoms of second stage of labor
3. Treatment
    a. Prevent if possible by close monitoring of patient
    b. Assist an imminent birth
        1) As calmly as possible
        2) Using asepsis as possible
        3) Caring properly for the neonate
        4) Reassuring the mother

XII. Induction of labor

A. Indications

1. Postmaturity
2. Diabetic mother

INFORMATION SHEET

3. Toxemia
4. Uterine inertia
5. History of precipitous labor
6. Ruptured membranes for more than 24 hours
7. Elective procedure

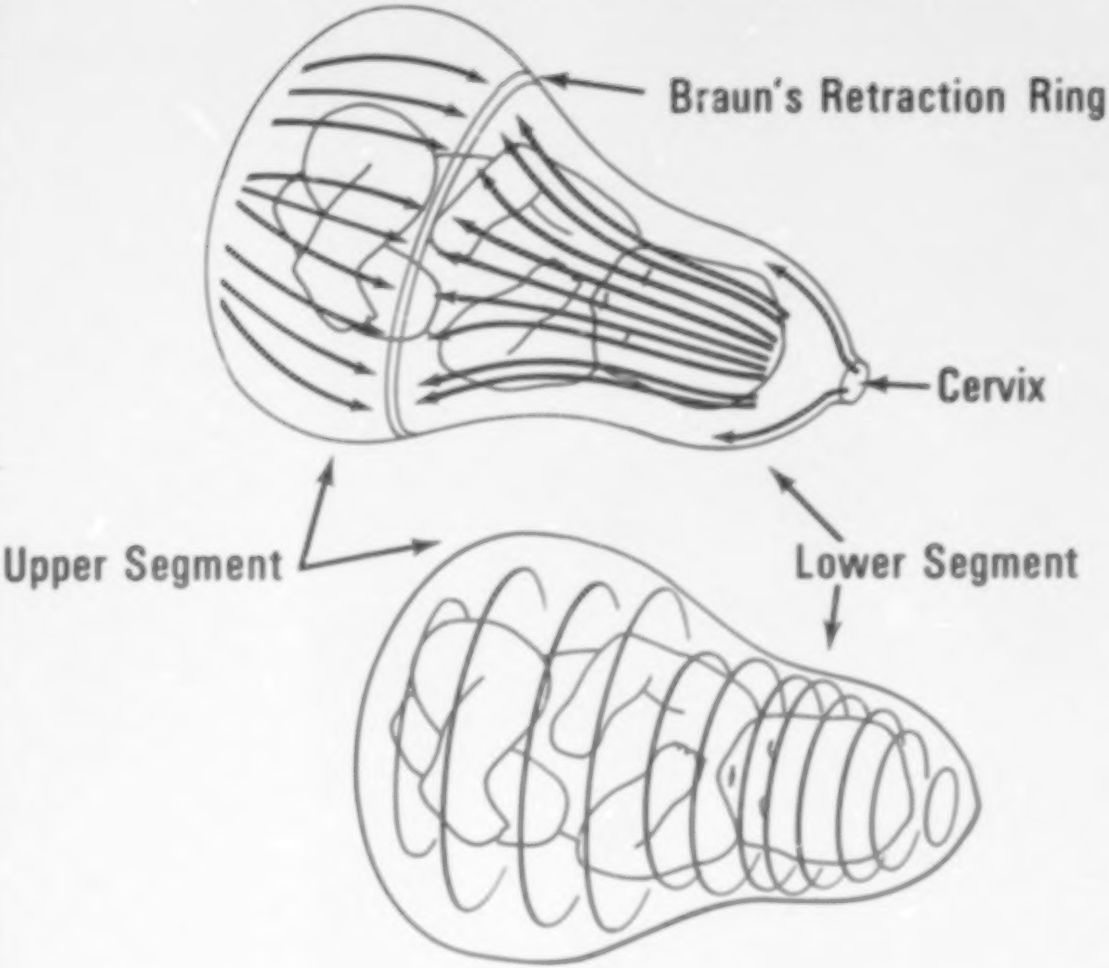
B. Contraindications

1. Previous cesarean section
2. Multiple births
3. First pregnancy
4. Cephalopelvic disproportion
5. Abnormal presentation
6. Overdistention of uterus
7. Fetal distress

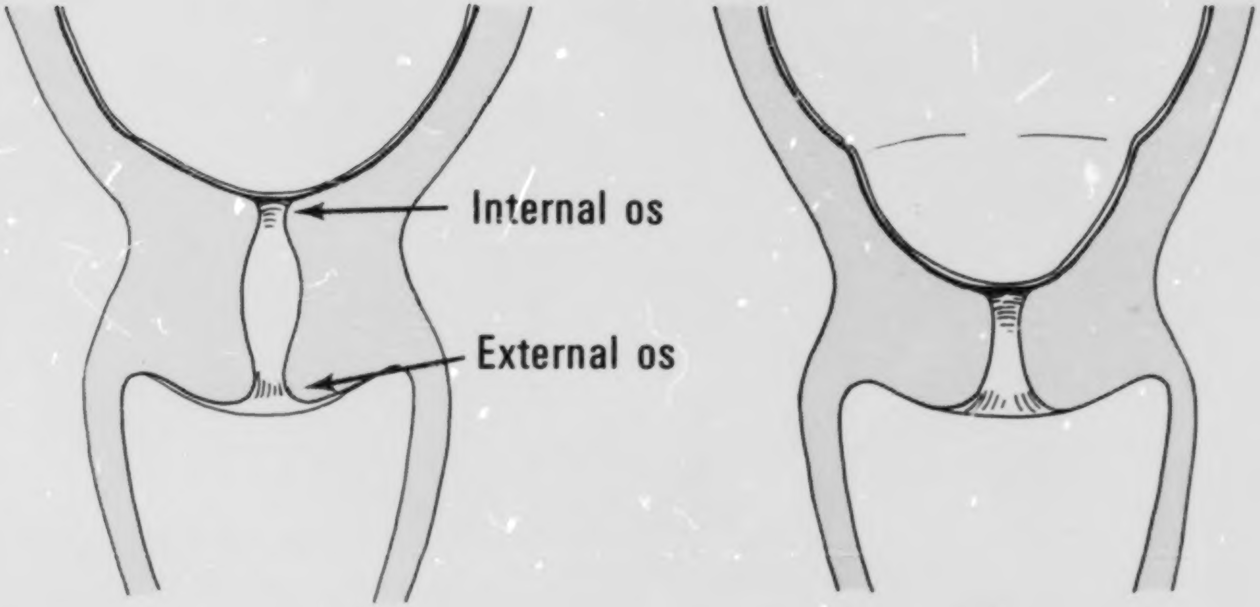
C. Nursing responsibilities

1. Vital signs, fetal heart, and contractions should be observed closely at least every 15 minutes
2. Physician regulates intravenous administration of oxytocin
3. Dosage of oxytocin must be clearly marked on IV bottle
4. Rate of flow must be carefully monitored
5. IV must be discontinued immediately if any adverse symptoms develop

Musculature of the Uterus


Braun's Retraction Ring
Cervix
Upper Segment
Lower Segment

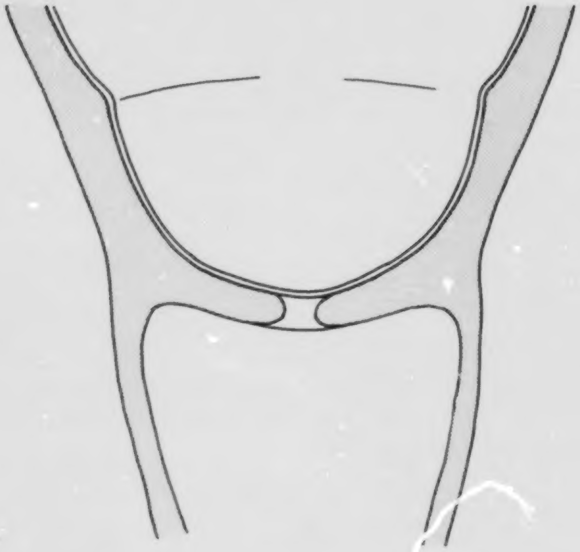
Before Labor and Early Effacement


Internal os
External os

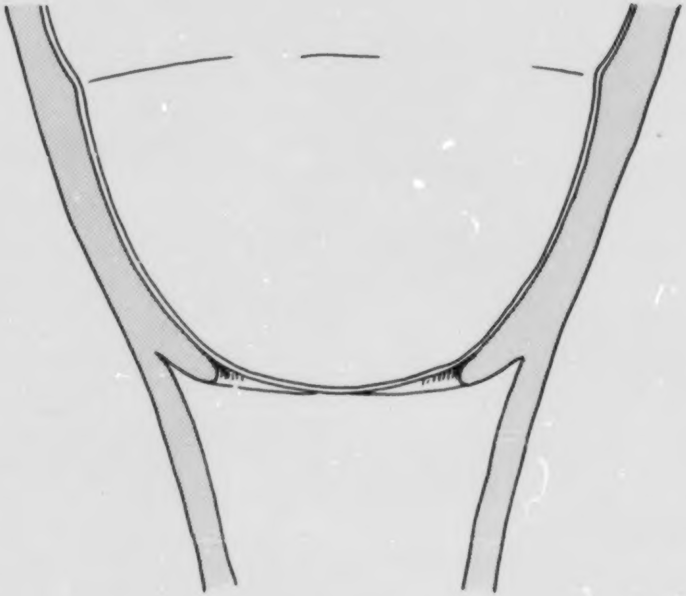
Before Labor
No Effacement or Dilatation

Early Effacement
No Dilatation

Complete Effacement and Complete Dilatation

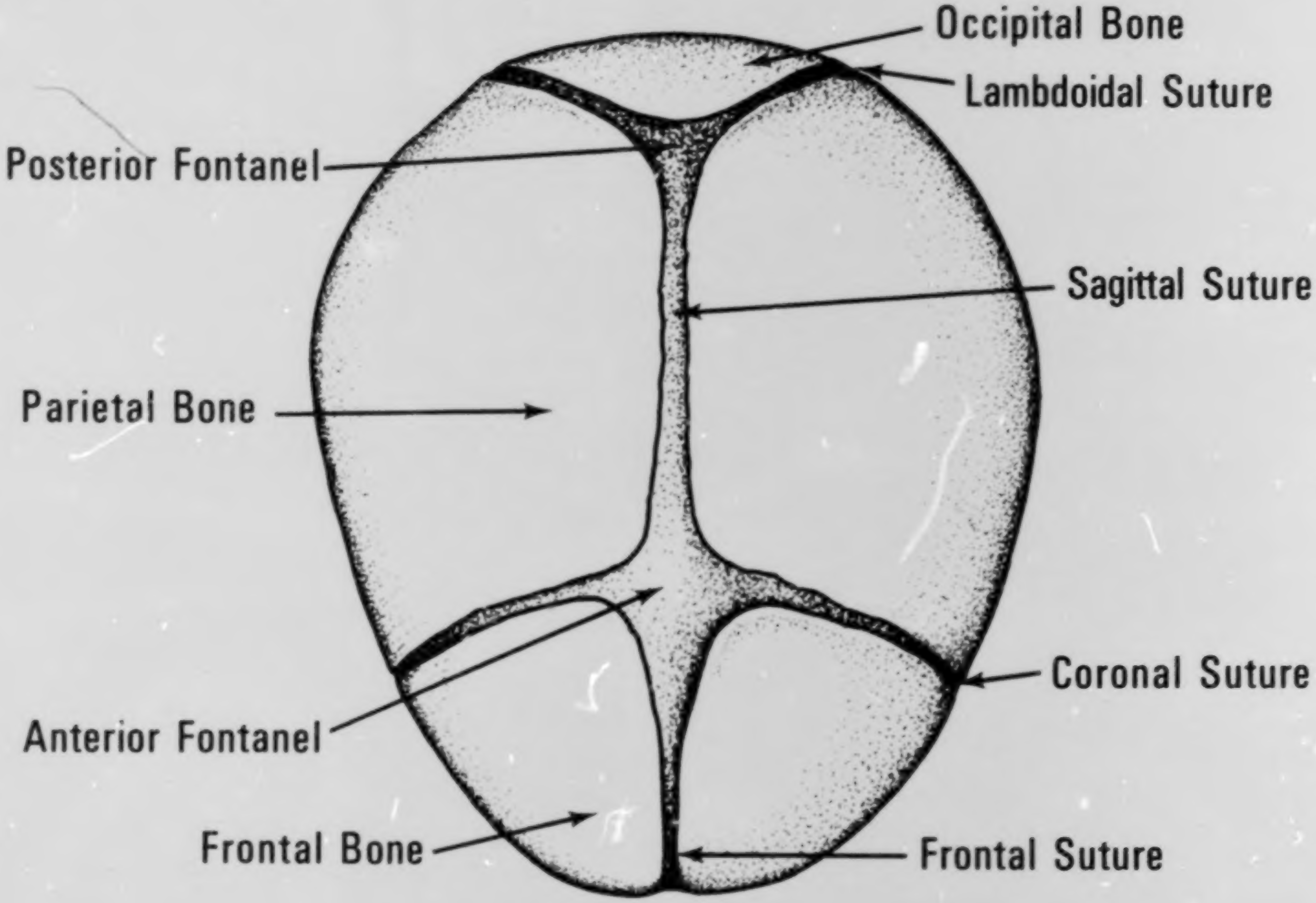


Complete Effacement
No Dilatation

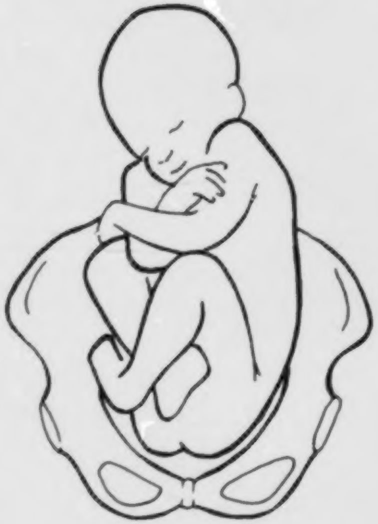


Complete Dilatation

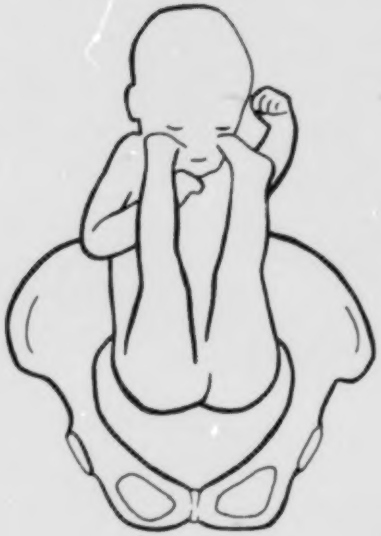
Fetal Skull


Occipital Bone
Lambdoidal Suture
Posterior Fontanel
Sagittal Suture
Parietal Bone
Coronal Suture
Anterior Fontanel
Frontal Bone
Frontal Suture

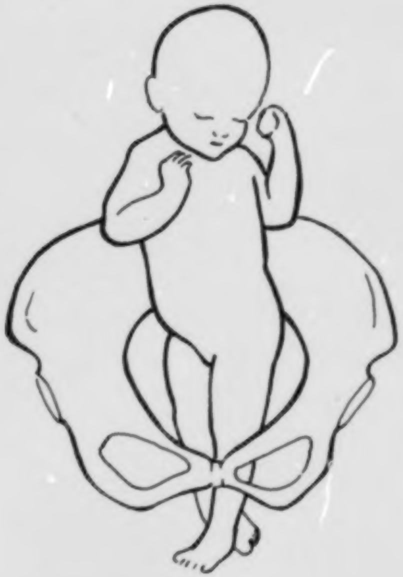
Breech Presentations



Complete

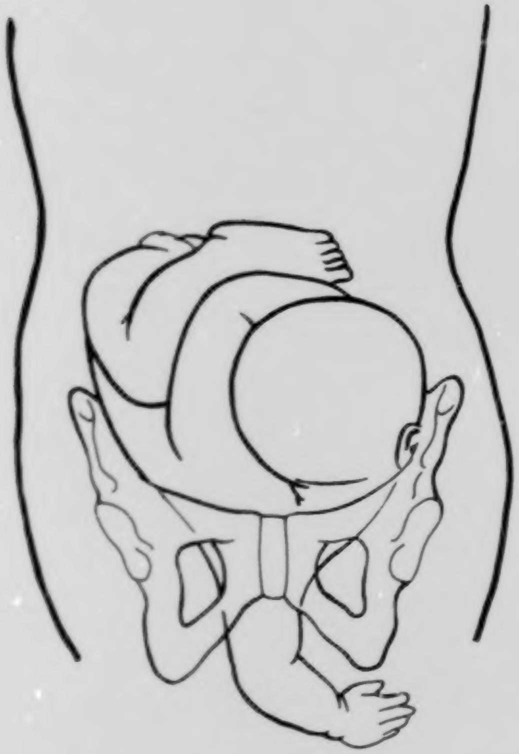


Frank

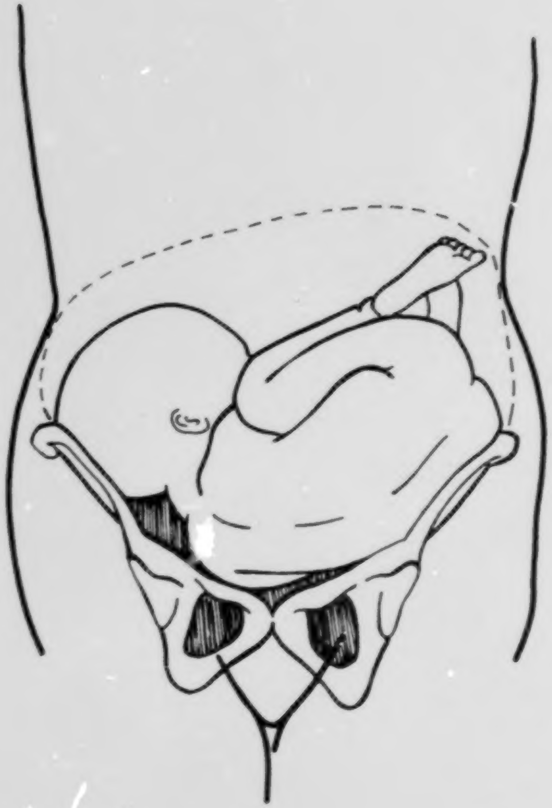


Footling

Shoulder and Transverse Presentations



Shoulder Presentation

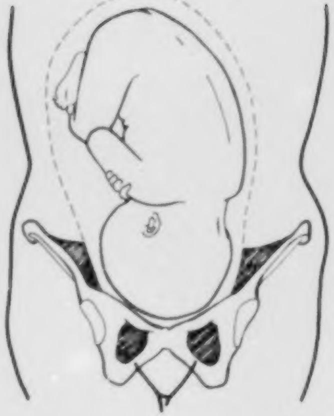


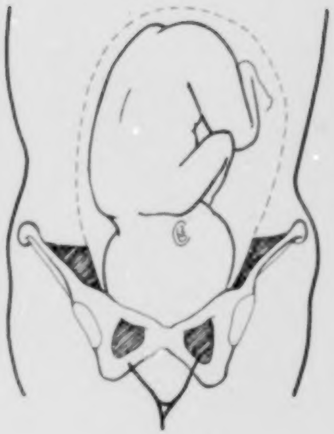
Transverse Presentation

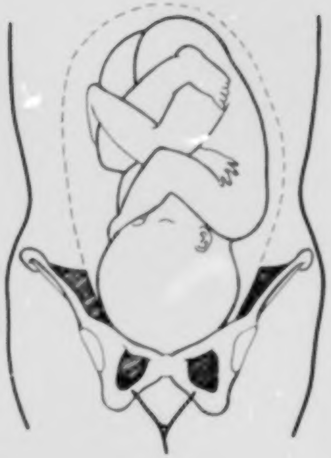
TM 6

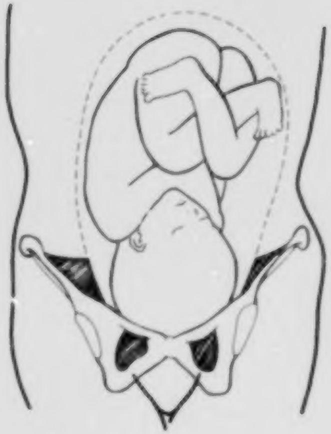
N II - 157-C

Cephalic Presentations


L.O.A.

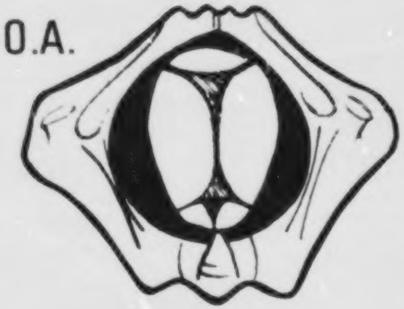

R.O.A.


L.O.P.

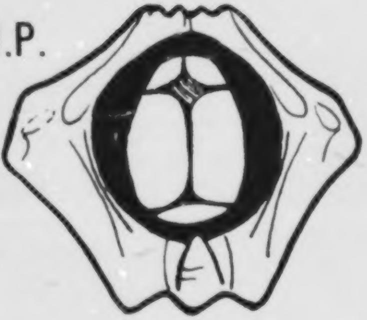

R.O.P.

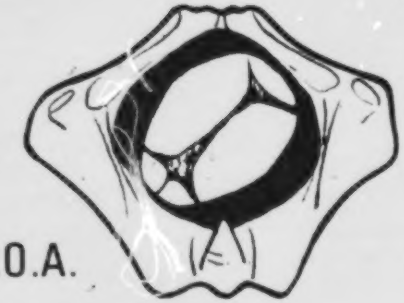
Cephalic Presentation in Pelvic Inlet

O.A.

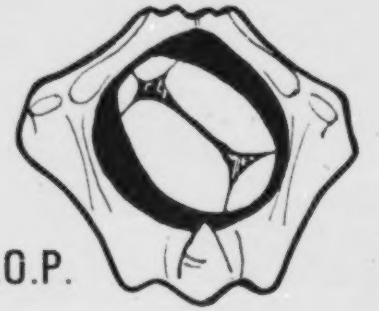


O.P.

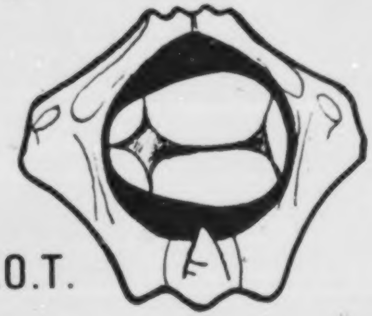




L.O.A.

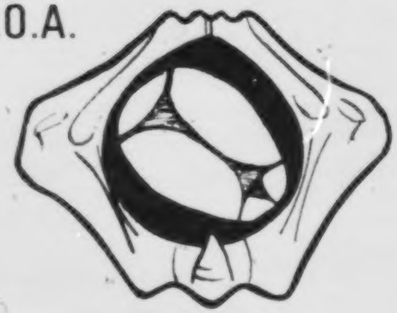


L.O.P.

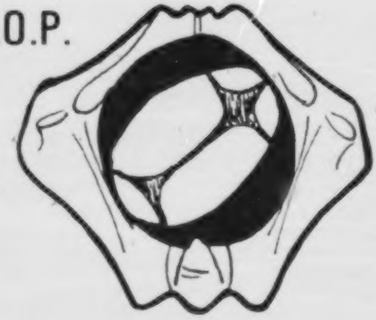


L.O.T.

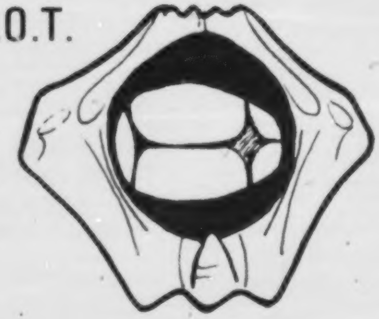
R.O.A.



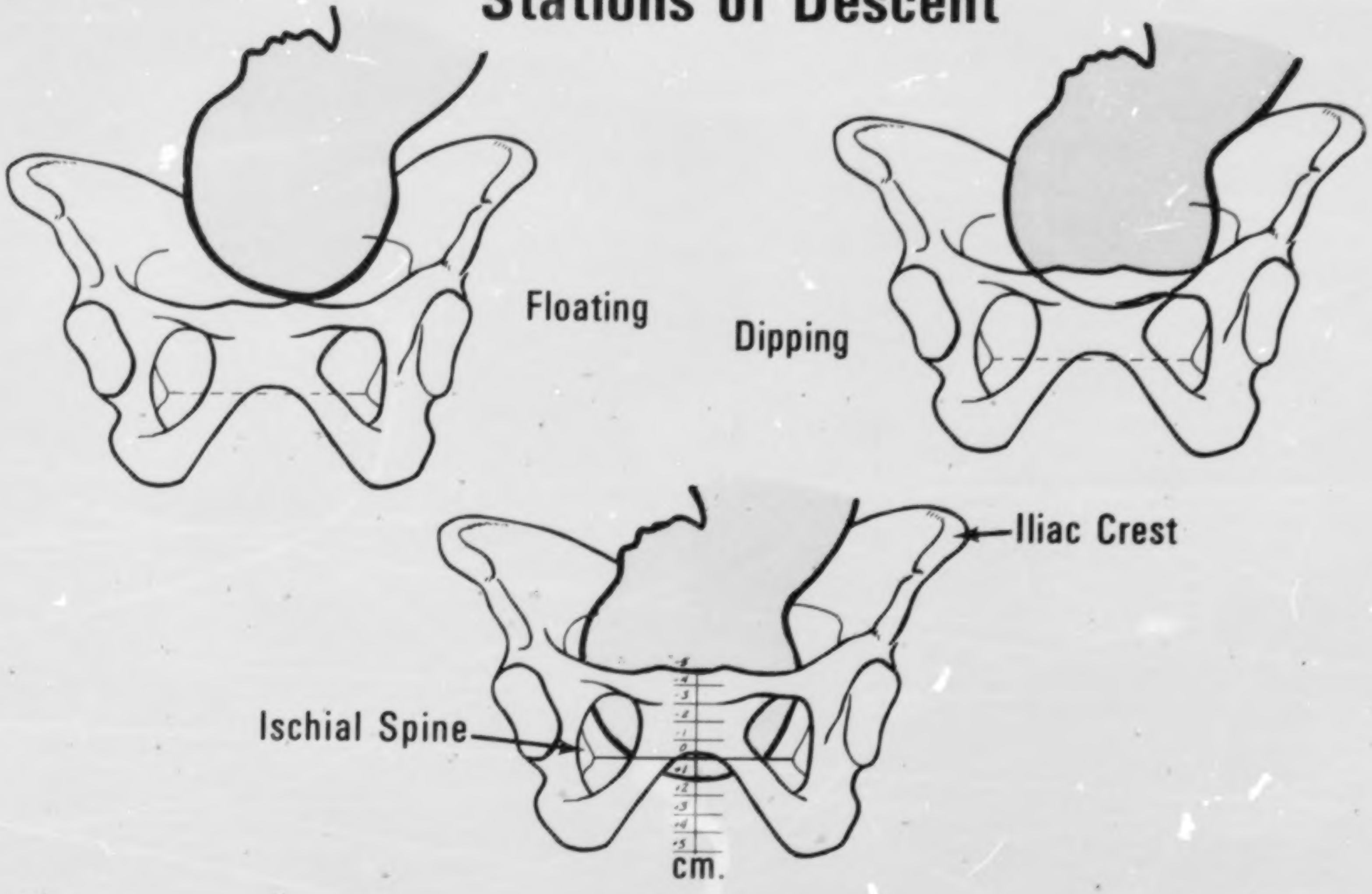
R.O.P.



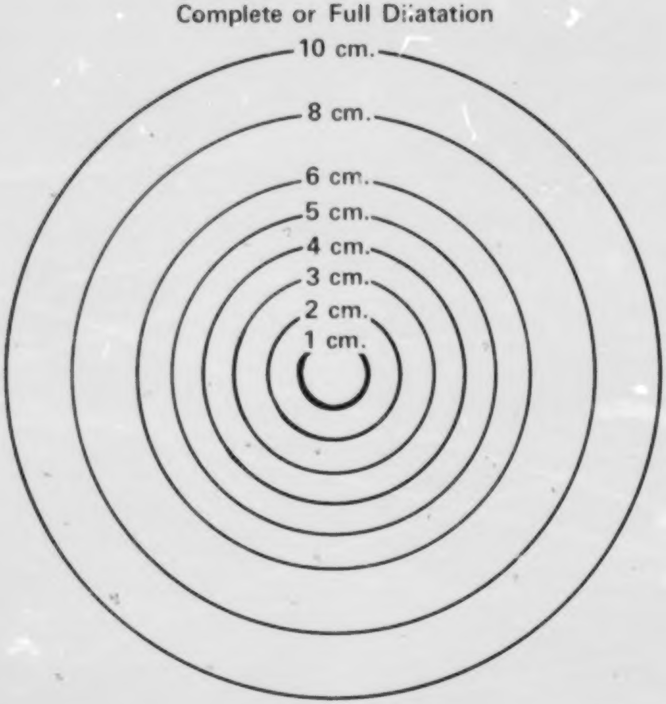
R.O.T.



Stations of Descent


Floating
Dipping
Iliac Crest
Ischial Spine
-5
-4
-3
-2
-1
0
+1
+2
+3
+4
+5
cm.
Perineum

Cervical Dilatation


Complete or Full Dilatation
10 cm.
8 cm.
6 cm.
5 cm.
4 cm.
3 cm.
2 cm.
1 cm.

N II - 165-C

CARE OF THE PATIENT IN LABOR
UNIT III

ASSIGNMENT SHEET #1--WRITE AN OBSTETRICAL CARE STUDY

Mrs. Susan Hoffman is to be admitted to the obstetrical unit. She is married and has two living children, ages two and five. This is her fourth pregnancy, with one pregnancy terminating in a miscarriage.

1. What questions will you ask Mrs. Hoffman to determine the approximate status of her labor?
2. Describe the admission procedure for maternity patients in your institution.
3. How does the admission of a maternity patient differ from the admission of other adult patients?
4. How would you expect Mrs. Hoffman's labor to differ from that of a primipara?
5. You are assigned to care for Mrs. Hoffman during labor.
   a. List measures you would use to promote physical comfort during the first stage of labor.
   b. List observations to be made during the first stage and explain reasons for the frequency of the observations.
   c. What would you do to provide emotional support?
6. Mrs. Hoffman's membranes rupture after 45 minutes of labor. List your actions in order of importance.
7. Give an example of the record you would keep of the contractions.
8. When the vital signs were taken at the time of admission, the fetal heart rate was 140. A short time after the membranes rupture, the fetal heart rate is 120; the next time you check, it has dropped to 112. What action will you take?
9. Mrs. Hoffman's labor progresses satisfactorily.
   a. When she is ready to be moved to the delivery room, what signs will you observe?
   b. Describe the procedure for moving her to the delivery room.
   c. After delivery will she return to her room or be kept in the delivery room?
   d. What are your responsibilities after she is moved to the delivery room? When she is ready to return to her room?

CARE OF THE PATIENT IN LABOR
UNIT III

JOB SHEET #1--PERFORM PERINEAL PREP

I. Equipment

- A. Prep tray
- B. Adequate light

II. Procedure

- A. Assemble equipment
- B. Wash hands
- C. Identify patient and explain procedure
- D. Provide privacy
- E. Place bed protector under buttocks
- F. Replace top covers with drape or bath blanket
- G. Position patient in lithotomy position
- H. Begin shaving
  1. Lather vulva with soap solution using gauze
  2. Begin shaving at top of pubic area
     - a. Use short, downward strokes
     - b. Exert slight tension with other hand along and above razor strokes
     - c. Rinse razor as needed in basin of water
  3. Cleanse the entire area with warm water after shaving

     (NOTE: Use downward strokes from pubes to rectum when shaving, cleaning, or drying. Use care when shaving around moles or other skin elevations.)
  4. Shave anal area
     - a. Place patient in Sims' position
     - b. Lather anal area

JOB SHEET #1

    c. Shave around anus, using short strokes
    d. Cleanse anal area with warm water and dry

I. Remove bed protector; replace it with a dry one

J. Remove drape and replace top covers

K. Provide for patient's comfort

L. Clean equipment and return to proper place

M. Wash hands

N. Record and report procedure

CARE OF THE PATIENT IN LABOR
UNIT III

JOB SHEET #2--TIME OBSTETRICAL CONTRACTIONS

I. Equipment

A. Watch or clock with second hand

B. Pad of paper

C. Pen

II. Procedure

A. Wash hands

(NOTE: Use warm water so the hands are not too cold.)

B. Identify patient and explain procedure

C. Provide privacy

D. Place hand lightly on the fundus of the uterus, just above the umbilicus

(NOTE: The muscular contractions are strongest in the fundus.)

E. Note the time when the uterus becomes firm and pushes up against the hand

F. Note how long the fundus stays firm

(NOTE: This is the duration of one contraction.)

G. Note the time when the uterus becomes firm again

(NOTE: From the beginning of one contraction to the beginning of the next one determines frequency.)

H. Continue checking the contractions, noting the duration of the contractions and the relaxation periods between

I. Record contractions

Example: "Contraction $\bar{q}$ 6 minutes for 35 seconds, mild in intensity" or "Contractions becoming harder, $\bar{q}$ 4 minutes for 45 seconds."

CARE OF THE PATIENT IN LABOR
UNIT III

JOB SHEET #3--CHECK THE FETAL HEART RATE

I. Equipment

A. Fetuscope or stethoscope

B. Watch with second hand

C. Pad of paper

D. Pen

II. Procedure

A. Wash hands

B. Identify patient and explain procedure

C. Provide privacy

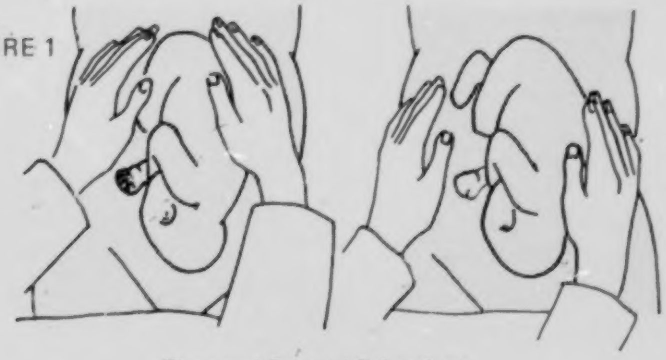
D. Warm bell of scope in the hand

E. Determine that the patient is not having a contraction

F. Palpate uterus to determine position of fetus (Figures 1 and 2)

(NOTE: The fetal heart tones are best heard through the baby's back because it is usually located close to the abdominal wall of the mother. The back of the fetus is felt as a firm, continuous mass.)

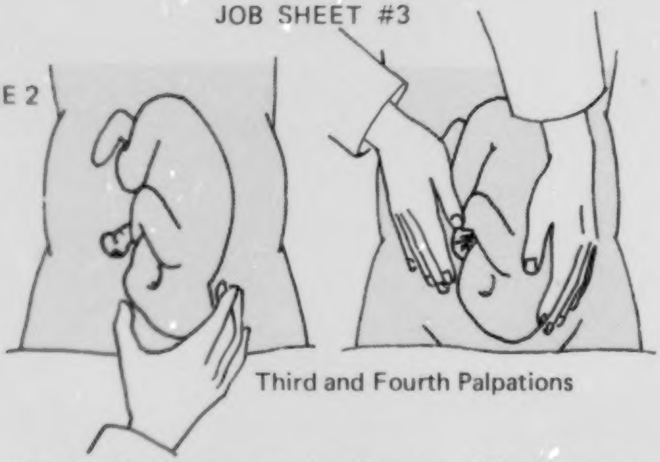
FIGURE 1



First and Second Palpations

JOB SHEET #3

FIGURE 2



Third and Fourth Palpations

G. Locate the fetal heart tone by listening with the scope

H. Count the heart rate for 60 seconds; palpate the mother's pulse at the same time to be sure you are counting the fetal heart rate

I. Multipy the rate for 15 seconds by four to determine the rate for one minute

J. Count fetal heart rate for a full minute for a more accurate check if it is irregular or appears to be too slow or too rapid

K. Mark abdomen with pen to aid in location of heart tone

L. Record fetal heart rate and time taken

CARE OF THE PATIENT IN LABOR
UNIT III

TEST

1. Match the terms on the right to the correct definition. (The answers for "a" through "l" are on this page.)

_____a. Part of the fetus that is palpated through the cervix at the beginning of labor; presentation

_____b. Position assumed by the fetus in utero

_____c. Line of junction or closure between bones, as in the skull

_____d. Relationship of the spine of the fetus to the spine of the mother

_____e. Relationship of the presenting part to the mother's pelvis

_____f. Conforming to a given shape, as the fetal head in its passage through the birth canal

_____g. Tearing or breaking of the fetal membranes; rupture of the membranes

_____h. Premature expulsion of the cord during parturition, prior to the delivery of the fetus

_____i. Having the power or tendency to contract

_____j. Relationship of the presenting part to the level of the ischial spines

_____k. Mass of thick, tenacious mucus which fills the cervix during pregnancy and is discharged at the beginning of labor

_____l. Amnion; bag of waters

1. Position
2. Prolapse of the umbilical cord
3. Station
4. Suture line
5. Amniotomy
6. Contractile
7. Lie
8. Mucous plug
9. Attitude
10. Amniotic sac
11. Presenting part
12. Molding

(The answers for "m" through "u" are on this page.)

_____m. Sudden expulsion of the fetus without preparation for delivery

_____n. Drug that hastens parturition

_____o. Pasty, greenish mass, consisting of mucus, epithelial cells, bile, lanugo, and vernix caseosa, that collects in the intestine of the fetus

_____p. Cheesy deposit on the surface of the fetus

_____q. Abnormal size relationship between two objects

_____r. Downlike hair that covers the fetus from about the fifth month of gestation

_____s. Soft and spongy to palpation

_____t. Pertaining to the head of the fetus and the pelvis of the mother

_____u. Diminution or cessation of uterine contractions during labor

_____v. Highest point of the skull; the crown

13. Uterine inertia
14. Cephalopelvic
15. Precipitation
16. Boggy
17. Meconium
18. Vertex
19. Disproportion
20. Oxytocic
21. Lanugo
22. Vernix caseosa

2. List three possible reasons for the onset of labor.

a.

b.

c.

3. Describe the structures involved in the labor process.

a.

b.

c.

4. Compare true labor and false labor.

5. Match the terms on the right to the correct description.

______a. Presenting part freely movable above the inlet

______b. Buttocks presenting with legs extended and feet against the face

______c. Back of head to right of sacrum

______d. One or both feet presenting

______e. Largest diameter of presenting part through the inlet

______f. Back of head to symphysis pubis

______g. Buttocks presenting

______h. Spine of fetus parallel to spine of mother

______i. Chin flexed on chest with occiput presenting

______j. Back of head to sacrum

______k. Any part of head presenting

______l. Back of head to right of symphysis pubis

______m. Shoulder or arm presenting

______n. Back of head to left of sacrum

______o. Arms and legs flexed, fetus ovoid

______p. Back of head to right side

______q. Buttocks and feet presenting together

______r. Presenting part partially through the inlet

______s. Back of head to left of symphysis pubis

______t. Spine of fetus at right angle to spine of mother

______u. Back of head to left side

______v. Progress through birth canal measured by station

1. Left occiput transverse
2. Shoulder
3. Transverse lie
4. Left occiput posterior
5. Breech
6. Occiput anterior
7. Footling
8. Dipping
9. Occiput posterior
10. Engaged
11. Frank breech
12. Left occiput anterior
13. Flexion
14. Longitudinal lie
15. Right occiput posterior
16. Cephalic
17. Floating
18. Fetal position
19. Right occiput anterior
20. Descent
21. Full or complete breech
22. Right occiput transverse

6. Describe the first stage of labor.
   a. Duration
   b. Characteristics of early phase
   c. Characteristics of mid or active phase
   d. Characteristics of transition or end of stage one
   e. Rupture of membranes

7. List the admitting procedures for the obstetrical patient.

8. Describe nursing responsibilities during stage one.

   a. Nursing responsibilities

   b. Monitoring the fetal heart

9. List eight maternal danger signals.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

10. List three fetal danger signals.

    a.

    b.

    c.

11. List characteristics, causes, and treatments for the following complications of labor and delivery.

    a. Abnormal positions of fetus

        1) Characteristics

        2) Causes

        3) Treatment

    b. Pathological retraction ring or Bandl's ring

        1) Characteristics

        2) Causes

        3) Treatment

c. Secondary inertia

    1) Characteristics

    2) Causes

    3) Treatment

d. Prolapsed cord

    1) Characteristics

    2) Causes

    3) Prevention

    4) Treatment

e. Primary inertia

    1) Characteristics

2) Causes

3) Treatment

f. Precipitate labor and delivery

1) Characteristics

2) Causes

3) Treatment

12. List indications, contraindications, and nursing responsibilities for induction of labor.

a. Indications

b. Contraindications

c. Nursing responsibilities

13. Write an obstetrical care study.

14. Demonstrate the ability to:

    a. Perform perineal prep.

    b. Time obstetrical contractions.

    c. Check the fetal heart rate.

    (NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

CARE OF THE PATIENT IN LABOR
UNIT III

ANSWERS TO TEST

1.

a.	11	h.	2	o.	17	v.	18
b.	9	i.	6	p.	22		
c.	4	j.	3	q.	19		
d.	7	k.	8	r.	21		
e.	1	l.	10	s.	16		
f.	12	m.	15	t.	14		
g.	5	n.	20	u.	13		

2. Any three of the following:

   a. Diminished placental function

   b. Distended uterus causing pressure on nerve and muscle fibers

   c. Pressure causing stretching of cervix which stimulates uterine contractions

   d. Decrease in uterine blood flow and hormone production causing irritation of the myometrium

3. Description should include:

   a. Pelvis

      1) False

         a) Location--Portion above the pelvic brim

         b) Functions

            (1) Supports enlarging uterus during pregnancy

            (2) Helps direct fetal head into true pelvis

      2) True

         a) Location--Portion below the pelvic brim divided into the inlet or upper boundary, the cavity, and the outlet or lower boundary

b) Function--Articulations and ligaments expand to accommodate the fetus, particularly the skull

b. Uterus

1) Divisions

a) Upper segment--Muscles thick and contractile

b) Lower segment--Muscles thin and passive

c) Juncture--Braun's retraction ring

d) Cervix

2) Contractions

a) Upper segment contracts rhythmically

b) Lower segment gradually stretches

c) Contraction and stretching brings about the dilatation and effacement of the cervix

c. Fetal skull

1) Bones are joined only by membranes at the suture lines

2) Incomplete ossification of fetal cranium permits molding of the bones to adapt to the birth canal

3) Molding may be extensive with the newborn's head misshapen

4) Newborn's head will usually resume its normal contour in a few days

4. Comparison should include:

True labor	False labor
a. Contractions regular and gradually intensify	a. Contractions irregular and disappear on lying down
b. Evidence of show	b. No show
c. Increased by activity	c. No change produced by activity
d. Descent of presenting part	d. Presenting part does not descend

e.	Backache accompanies abdominal pain	e.	Discomfort mainly in abdomen
f.	Discomfort not relieved by mild sedation	f.	Discomfort stops with medication
g.	Cervix soft	g.	Cervix firm

5.

a.	17	i.	13	p.	22
b.	11	j.	9	q.	21
c.	15	k.	16	r.	8
d.	7	l.	19	s.	12
e.	10	m.	2	t.	3
f.	6	n.	4	u.	1
g.	5	o.	18	v.	20
h.	14				

6. Description should include:

a. Duration

1) Primipara, 8-16 hours

2) Multipara, 2-10 hours

b. Characteristics of early phase

1) Contractions are slow, short, rhythmic

a) Frequency--Every 5 to 20 minutes

b) Duration--30 to 50 seconds

2) Discomfort radiates from lumbar area to anterior abdomen

3) Cervix dilates to 3 cm

c. Characteristics of mid or active phase

1) Contractions increase in frequency, duration, and intensity

a) Frequency--Every 2 to 4 minutes

b) Duration--45 to 60 seconds

2) Cervix dilates to 8 cm

d. Characteristics of transition or end of stage one

    1) Contractions become longer and more intense

        a) Frequency--Every 1 1/2 to 3 minutes

        b) Duration--60 to 90 seconds

    2) Cervix is completely dilated, 8 to 10 cm

e. Rupture of membranes

    1) This may occur any time during labor

    2) Prolapse of umbilical cord may follow premature rupture

7. a. Identify patient properly

b. Explain hospital procedure and techniques

c. Check vital signs including fetal heart rate

d. Notify doctor of admission; provide him with vital signs, fetal heart rate, and status of labor

e. Give enema and do vaginal prep as prescribed

f. Obtain history

    1) Medical history

    2) Obstetrical status; para number and gravida number

    3) Symptoms of labor including presence of show, rupture of membranes, character and duration of contractions

    4) Any allergies

    5) Mother's knowledge of childbirth, any special preparation, and previous complications

    6) Presence of current family illness

    7) Time of last meal

    8) Plans for breast or bottle feeding

    9) Any physical problems or disabilities

    10) Blood type and incompatibilities

g. Physical examination including assessment of obstetrical status

8. Description should include:
   - a. Maintain aseptic technique to avoid introducing pathogens into the vaginal canal
   - b. Protect patient from physical harm
     - 1) Assist patient to get in and out of bed
     - 2) Use side rails after sedation
   - c. Monitor progress and condition
     - 1) Take vital signs at prescribed intervals
     - 2) Determine frequency, intensity, and duration of contractions
     - 3) Observe vaginal discharge
   - d. Check contour and size of abdomen for
     - 1) Fetal movements
     - 2) Bladder distention
   - e. Provide food and fluids as prescribed
   - f. Provide for comfort
     - 1) Change position frequently
     - 2) Ambulate if possible until membranes rupture
     - 3) Provide mouth care frequently
     - 4) Keep patient clean and dry
     - 5) Omit perineal pads during labor
   - g. Monitor closely after membranes rupture for
     - 1) Amount of discharge
     - 2) Bleeding
     - 3) Meconium staining
     - 4) Fetal heart for distress
   - h. Administer medication as prescribed

i. Provide emotional support

  1) Encourage verbalization concerning preparation for labor and delivery including her fears and feelings

  2) Explain procedures and labor process

  3) Stay with the patient as much as possible; leave her only for very short periods of time

  4) Permit the person of her choice to remain with the patient throughout her labor

  5) Provide physical support by touching the patient and massaging her back and abdomen as indicated to relieve distress

  6) Assist with breathing exercises and relaxation techniques to help reduce pain and tension

  7) Reassure and encourage patient as labor progresses

  8) Provide privacy and avoid unnecessary exposure

j. Monitor fetal heart

  1) Check frequently to assess any changes in fetal condition

    a) Normal rate is 120 to 160 per minute

    b) Rate slows during contraction

    c) Rate increases between contractions

  2) Report immediately if rate is below 100 or above 160; abnormal rate indicates fetal distress

  3) Determine location of fetal heart--Fetal heart tone will move from side to side and down as fetus rotates and descends

    a) Cephalic presentation--May be heard in lower abdominal quadrants

    b) Breech presentation--May be heard in upper abdominal quadrants

9. Any eight of the following:

  a. Elevation of temperature with or without chills

  b. Change in pulse rate

  c. Deviation in blood pressure

d. Change in tone and contour of the uterus which may indicate impending rupture

e. Sudden hard contraction followed by cessation of contractions and accompanied by acute abdominal pain and signs of shock

f. Excessive vomiting

g. Hyperventilation which disrupts normal oxygen and carbon dioxide exchange

h. Supine hypotension syndrome which produces symptoms similar to shock and may decrease fetal heart rate

i. Pallor, cyanosis, or signs of cardiac distress

j. Vaginal bleeding

k. Headache, dizziness, epigastric pain, spots before the eyes, edema of hands or face

l. Convulsions

10. Any three of the following:

a. Deviations in fetal heart rate

b. Passage of meconium

c. Fetal hyperactivity which indicates diminished oxygen supply

d. Prolapse of the cord

11. a. Abnormal positions of fetus

1) Characteristics

a) Contractions felt primarily in the back, causing almost continuous back pain

b) Early rupture of membranes

c) Frequent and irregular contractions

d) Presenting part remains high during labor

2) Causes

a) Premature labor

b) Short umbilical cord

- c) Disproportionate pelvis
- d) Placenta placed low

3) Treatment

- a) Manual rotation of fetus to better position
- b) Back massage and positioning to relieve pain
- c) Forceps delivery
- d) Cesarean section

b. Pathological retraction ring or Bandl's ring

1) Characteristics

- a) Over-stretching of lower segment of uterus with thickening of muscles of upper segment
- b) Retraction ring elevated to level of umbilicus
- c) Strong contractions with bearing down but no progress
- d) Rapid pulse and panting respirations
- e) Extreme pain

2) Causes

- a) Improper use of sedatives
- b) Disproportion of pelvis and/or fetus
- c) Abnormal presentation
- d) Prolonged labor
- e) Traumatic delivery
- f) Scar from previous cesarean section or uterine surgery

3) Treatment

- a) Notify physician of difficulties immediately
- b) Cesarean section usually performed immediately

c. Secondary inertia

    1) Characteristics

        a) It occurs during mid or active phase of stage one

        b) Contractions are weak but coordinated and not too painful

    2) Causes

        a) Overdistention of uterus

        b) Bladder or bowel distention

        c) Weak abdominal muscles

        d) Emotional stress

        e) Cervical rigidity

        f) Fatigue

        g) Pelvic disproportion

        h) Poor position of fetus

    3) Treatment

        a) Evaluation for disproportion or poor position; cesarean section may be indicated

        b) Oxytocics if no abnormality is detected

        c) Amniotomy if indicated

        d) IV fluids to prevent dehydration

        e) Continuous emotional support and encouragement

        f) Provision for rest and comfort

d. Prolapsed cord

    1) Characteristic--Umbilical cord visible or protruding from vagina

    2) Causes

        a) Premature rupture of membranes before presenting part begins descent

        b) More frequent when presenting part is other than cephalic

        c) Long cord
        d) Low placed placenta
        e) Hydramnios
        f) Premature labor
    3) Prevention
        a) Bed rest after rupture of membranes
        b) Delay of amniotomy until head is engaged
    4) Treatment
        a) Trendelenberg or knee-chest position
        b) Application of sterile moist dressings to protect cord
        c) Immediate delivery or cesarean section as indicated

e. Primary inertia
    1) Characteristics
        a) It occurs in early phase of stage one
        b) Contractions are weak, uncoordinated, but painful
        c) Labor does not progress
    2) Causes
        a) Muscle weakness and/or nerve defects
        b) Overdistention of the uterus due to multiple births or hydramnios
        c) Emotional stress
        d) Rigid, uneffaced cervix, usually in an older primipara
        e) Too early sedation
    3) Treatment
        a) Rest and sedation
        b) Oxytocics after a period of rest
        c) Enema after rest period

- d) Hydration as needed
- e) Ambulation as permitted

f. Precipitate labor and delivery

- 1) Characteristics
  - a) Labor short, progresses rapidly
  - b) Occurrance usually in multipara
- 2) Causes
  - a) Relaxed cervix
  - b) Previous rapid delivery
  - c) Small fetus
  - d) Multiple birth
  - e) Inattention to signs and symptoms of second stage of labor
- 3) Treatment
  - a) Prevent if possible by close monitoring of patient
  - b) Assist an imminent birth
    - (1) As calmly as possible
    - (2) Using asepsis as possible
    - (3) Caring properly for the neonate
    - (4) Reassuring the mother

12. a. Indications

- 1) Postmaturity
- 2) Diabetic mother
- 3) Toxemia
- 4) Uterine inertia
- 5) History of precipitous labor
- 6) Ruptured membranes for more than 24 hours
- 7) Elective procedure

b. Contraindications

   1) Previous cesarean section

   2) Multiple births

   3) First pregnancy

   4) Cephalopelvic disproportion

   5) Abnormal presentation

   6) Overdistention of uterus

   7) Fetal distress

c. Nursing responsibilities

   1) Vital signs, fetal heart, and contractions should be observed closely at least every 15 minutes

   2) Physician regulates intravenous administration of oxytocin

   3) Dosage of oxytocin must be clearly marked on IV bottle

   4) Rate of flow must be carefully monitored

   5) IV must be discontinued immediately if any adverse symptoms develop

13. Evaluated to the satisfaction of the instructor.

14. Performance skills evaluated to the satisfaction of the instructor.

CARE OF THE PATIENT IN THE DELIVERY ROOM
UNIT IV

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list types of anesthesia and their advantages and disadvantages for obstetrical patients. The student will be able to describe delivery and aftercare procedures and nursing responsibilities. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with the delivery room to the correct definitions.
2. List types, advantages, and disadvantages of inhalation anesthesia during childbirth.
3. List types, advantages, and disadvantages of regional anesthesia during childbirth.
4. Describe preparation of the delivery room for a delivery.
5. Describe the duration and characteristics of the second stage of labor.
6. Describe the transfer of a patient to the delivery room.
7. Discuss nursing responsibilities during the second stage.
8. Describe the delivery of an infant.
9. Describe nursing responsibilities for the newborn.
10. Describe the third stage of labor including duration, characteristics, and delivery of the placenta.
11. Describe the completion of delivery room care of the mother.
12. Describe the duration and characteristics of the fourth stage.
13. Discuss nursing responsibilities during the fourth stage.
14. Distinguish between the types of cesarean sections.
15. Discuss nursing responsibilities for the patient having a cesarean section.
16. Describe emergency delivery of an infant by a nurse.

CARE OF THE PATIENT IN THE DELIVERY ROOM
UNIT IV

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information sheet.

  C. Discuss terminal and specific objectives.

  D. Discuss information sheet.

  E. Demonstrate the procedure for setting up the delivery room.

  F. Discuss the obstetrical procedures outlined in the procedure manual of the health care institution.

  G. Provide copies of labor room record if one is used.

  H. Have students role play transferring patient from stretcher to delivery table and positioning patient properly.

  I. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Participate in role play.

  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

C. Transparencies

1. TM 1--Saddle, Epidural, and Caudal Blocks
2. TM 2--Paracervical Block
3. TM 3--Pudendal Block
4. TM 4--Types of Episiotomies
5. TM 5--Engagement and Descent
6. TM 6--Beginning Extension
7. TM 7--Complete Extension
8. TM 8--Rotation
9. TM 9--Delivery of the Placenta
10. TM 10--Apgar Scoring Chart

D. Test

E. Answers to test

II. References:

A. Bleier, Inge J. *Maternity Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1971.

B. Bleier, Inge J. *Workbook in Bedside Maternity Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1974.

C. Broadribb, Violet, and Charlotte Corliss. *Maternal-Child Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1974.

D. Falconer, Mary W. et al. *The Drug, The Nurse, The Patient.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1974.

E. Fitzpatrick, Elise et al. *Maternity Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1971.

F. Ingalls, A. Joy, and M. Constance Salerno. *Maternal and Child Health Nursing.* St. Louis, Missouri: The C. V. Mosby Company, 1971.

G. Lerch, Constance. *Maternity Nursing.* St. Louis, Missouri: The C. V. Mosby Company, 1974.

III. Other materials:

A. Films

1. "Emergency Childbirth." American Medical Association Film Library, c/o Association-Sterling Films.
2. "Hypnosis as Sole Anesthesia for Cesarean Section." Upjohn Professional Film Library.
3. "Labor and Childbirth." Medical Films, Inc., 116 Natoma Street, San Francisco, California 94105.
4. "Multiple Births." Lederle Laboratories Film Library.
5. "Normal Delivery." Ortho Pharmaceutical Corporation.
6. "Epidural Anesthesia for Vaginal Delivery in Obstetrics." Winthrop Laboratories.
7. "Transvaginal Regional Anesthesia in Obstetrics." Winthrop Laboratories.

B. Filmstrips

1. "Pregnancy, Birth and The Newborn." Concept Media.
2. "Anesthetics and Analgesics for Childbirth." Medical Electronic Educational Services, Inc., 29423 West Six Mile Road, Livonia, Michigan 48152.
3. "Emergency Childbirth." Trainex Corporation.

C. Charts--Clinical Education Aids. Ross Laboratories.

1. No. 13, "Mechanism of Normal Labor."
2. No. 17, "Regional Anesthetics in Obstetrics."
3. No. 18, "Obstetrical Presentation and Position."
4. No. 2, "Placental Circulation."

CARE OF THE PATIENT IN THE DELIVERY ROOM
UNIT IV

INFORMATION SHEET

I. Terms and definitions

- A. Saddle block--Sensory loss in the saddle area which occurs in a type of caudal anesthesia (Transparency 1)
- B. Caudal block--Anesthesia induced by intermittent or continuous injection of an anesthetic into the sacral canal (Transparency 1)
- C. Paracervical block--Injection of anesthesia into the area around the cervix through the vagina (Transparency 2)
- D. Pudendal block--Injection of local anesthesia into the pudendal nerve each side of the perineum near the ischial spine (Transparency 3)
- E. Dura mater--Outer membrane covering the spinal cord
- F. Epidural anesthesia--Injection of anesthesia into the space outside the dura mater in the lumbar region (Transparency 1)

  (NOTE: Other names for this type of anesthesia are lumbar epidural or peridural.)
- G. Laceration--Tear or wound made by tearing
- H. Episiotomy--Medial or lateral incision of the vulva to avoid laceration (Transparency 4)
- I. Ophthalmia neonatorum--Gonorrheal or purulent inflammation of the eye in the newborn
- J. Morbidity--Affected with disease

II. Inhalation anesthesia

- A. Types
  1. Nitrous oxide
  2. Cyclopropane
  3. Ethylene
  4. Trilene
  5. Ether

INFORMATION SHEET

B. Advantage--Causes loss of consciousness so mother is asleep during procedure

C. Disadvantages

1. May depress respirations of mother or neonate
2. Frequently causes vomiting with possibility of aspiration
3. May impair uterine contractions
4. Requires an anesthetist for administration

III. Regional anesthesia

A. Types

1. Spinal
2. Saddle (Transparency 1)
3. Caudal (Transparency 1)
4. Paracervical (Transparency 2)
5. Pudendal (Transparency 3)
6. Perineal
7. Epidural (Transparency 1)

B. Advantages

1. Mother awake throughout the procedure
2. Safer for neonate
3. No impairment of contractions

C. Disadvantages

1. Patient must be able to assume sitting position for administration of saddle or caudal block
2. Patient may have difficulty bearing down after anesthesia
3. Blood pressure and/or respirations may be affected in higher level administration

INFORMATION SHEET

    4. Voiding may be difficult in postpartum period
    5. Repeated injections may be necessary

IV. Preparation of delivery room

- A. Delivery room should be prepared before patient is to be transferred
- B. When delivery is expected, determine what equipment will be needed
    1. Size of gloves for physician and assistant
    2. Types of anesthesia
    3. Any special instruments the physician prefers
    4. Any special problems involving the patient
- C. Cap or hair cover, mask, and non-conducting shoes should be worn while preparing equipment
- D. Surgical aseptic techniques must be used
- E. Sterile packs of equipment are opened and arranged, then covered with sterile cover
- F. Incubator is prepared
- G. All personnel who enter the delivery room wear hair covers, masks, and non-conducting shoes
- H. Physician and assistant scrub as for a surgical procedure and wear sterile gloves and gown

V. Second stage of labor (Transparencies 5 and 6)

- A. Duration--From complete dilatation of the cervix through the delivery of the infant
    1. Primipara--30 minutes to 3 hours
    2. Multipara--5 to 30 minutes
- B. Characteristics
    1. Increased bloody show
    2. Pressure on rectum causing patient to feel desire to defecate
    3. Spontaneous bearing-down reflex

INFORMATION SHEET

4. Contractions almost continuously

5. Perineum begins to bulge (Transparency 6)

6. Crowning (Transparency 4)

VI. Transferring of the patient to the delivery room

A. Patient is transferred at the beginning of the second stage usually when the physician or charge nurse determines that delivery is imminent

1. A multipara may be transferred before she begins to bear down or have bulging of the perineum

2. A primipara may not deliver for as long as one hour after dilatation is complete; therefore, she will be more comfortable in the labor room

B. Patient can be transferred more easily between contractions

C. Patient should not be encouraged to bear down during transfer and positioning on delivery table

D. Patient's wrists are secured to prevent contamination of the sterile field

E. The patient's legs are placed in stirrups and covered as needed

1. Both legs should be raised at the same time

2. Stirrups must be adjusted to fit the patient properly

F. The foot of the table is dropped

G. The circulating nurse prepares the abdomen, thighs, and entire perineal area

1. The areas are cleansed with soap and water in sequence

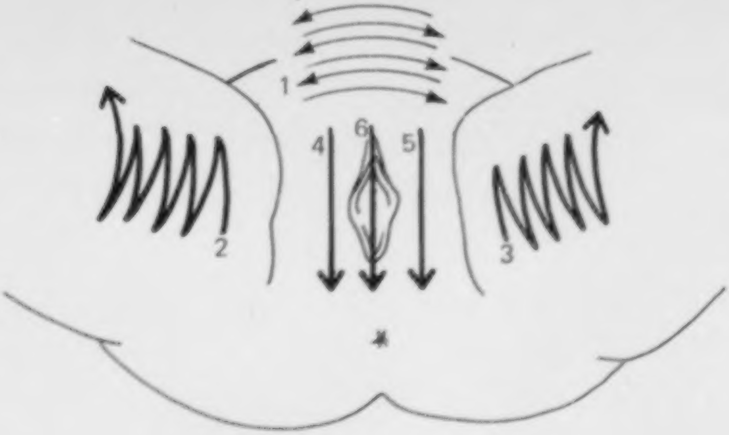
a. Abdomen beginning at pubic area and moving upward

b. Each thigh from the groin laterally

c. Sides of perineal area from anterior to posterior

INFORMATION SHEET

d. Center of perineal area from anterior to posterior



2. All cleansed areas are rinsed with water in the same sequence

3. Entire area is sprayed or painted with an antiseptic solution according to the physician's preference or institutional procedure

H. Sterile draped is placed under the buttocks; legs and abdomen are draped with sterile drapes by the physician

I. The circulating nurse provides a stool for the physician, places the sterile supply table conveniently, adjusts the lights, and secures any additional supplies

J. Throughout the procedure one nurse should be responsible for encouraging and assisting the patient as needed unless the patient is given a general anesthetic

VII. Nursing responsibilities during second stage

A. Coach the mother in proper technique in exerting downward pressure during contractions and relaxing as much as possible between contractions

B. Check maternal pulse and blood pressure frequently

C. Continue monitoring of contractions and fetal heart

D. Provide for comfort as indicated

E. Provide emotional support and encouragement

INFORMATION SHEET

VIII. Delivery of the infant (Transparencies 7 and 8)

- A. As time permits the physician may
  - 1. Examine the patient vaginally to determine position
  - 2. Catheterize the patient to insure an empty bladder
  - 3. Perform an episiotomy
  - 4. Apply forceps to assist the delivery
  - 5. Support perineum to prevent laceration
- B. After the head is delivered, the physician checks to see that the umbilical cord is not wrapped around the baby's neck
- C. As the head rotates, the physician uses a rubber syringe to aspirate mucus and fluid from the infant's mouth
- D. The physician continues the delivery, guiding the infant as needed
- E. After delivery the physician may
  - 1. Place the infant with head lower to clear the airway
  - 2. Aspirate mouth and nose
  - 3. Place infant on mother's abdomen
  - 4. Clamp and cut the cord
- F. Infant is given to nurse for further care

IX. Nursing responsibilities for the newborn

- A. Establish and maintain a patent airway
  - 1. Remove mucus and secretions from nose and mouth by wiping and/or suction
  - 2. Stimulate respiration as needed
    - a. Stroke chest and back
    - b. Administer oxygen
    - c. Resuscitate as indicated
  - 3. Position baby to prevent aspiration

INFORMATION SHEET

- B. Provide for warmth
- C. Identify properly
- D. Clamp cord and observe for bleeding
- E. Provide prophylactic treatment for eyes

  (NOTE: An ophthalmic solution of penicillin, an antibiotic, or one percent silver nitrate may be used.)
- F. Administer injection of vitamin K as prescribed
- G. Determine Apgar score within first five minutes (Transparency 10)

X. Third stage of labor (Transparency 9)

- A. Duration--After delivery of infant to delivery of placenta, usually 5 to 10 minutes
- B. Characteristics
  1. Gush of blood from the vagina
  2. Descent of umbilical cord
  3. Fundus becoming firm
  4. Spontaneous bearing down
- C. Delivery of the placenta
  1. After the delivery of the infant, the uterus begins to contract, which helps to separate the placenta from the uterine wall
  2. After the expulsion of the placenta, the uterus should be felt as a firm mass at the level of the umbilicus
     - a. Duncan mechanism--Maternal surface appears first
     - b. Schultze mechanism--Fetal surface appears first
     - c. Retained--All or a portion of the placenta remains in utero
  3. Before and/or after the expulsion of the placenta, the physician may order the administration of an oxytocic preparation such as Pitocin
  4. The placenta is checked carefully to be sure that it is intact
  5. The physician inspects the birth canal for any lacerations and sutures the episiotomy and lacerations as required

INFORMATION SHEET

XI. Completion of delivery room care of the mother

A. Head and foot of delivery table are realigned

B. Perineal pads are applied from front to back and secured

C. Patient is cleansed as necessary and dressed in clean gown

D. After transfer to a stretcher, the patient is covered and taken to a recovery room or to her unit

XII. Fourth stage

A. Duration--From the completion of birth process until postpartum condition is stabilized, usually 1 to 2 hours

B. Characteristics

1. Recovery from anesthesia

2. Stabilization of vital signs, bleeding, and fundal muscle tone

3. Intense emotional reaction of mother

4. Sudden severe chill due to the sudden change in intra-abdominal pressure

XIII. Nursing responsibilities during the fourth stage

(NOTE: Labor and delivery are physically and emotionally exhausting; therefore, the patient may need much assistance.)

A. Bathe and give perineal care as needed

B. Maintain patent airway until recovered from anesthesia

C. Monitor vital signs and intravenous administrations frequently

D. Palpate fundus frequently for firmness and location

1. Fundus should remain firm and at or below the level of the umbilicus

2. Massage gently until firm when fundus relaxes or becomes boggy

3. Notify physician or charge nurse immediately if massage fails to firm fundus

E. Observe vaginal bleeding and for signs of shock

INFORMATION SHEET

F. Observe for elimination and/or bladder distention

G. Note and report any unusual symptoms

H. Give medications as prescribed

I. Provide mouth care and personal care as indicated

J. Maintain patient safety as necessary

K. Provide emotional support as indicated

   1. Reduce disturbances to provide rest

   2. Permit patient full expression of her feelings

   3. Allow her to see her baby and family when she is ready

XIV. Types of cesarean sections

(NOTE: Cesarean section may be done on an elective or emergency basis depending upon the patient's history and condition.)

A. Classical--Uterus is incised in the midline

   1. Advantage--Performed quickly

   2. Disadvantage--Greater danger of rupturing the scar in subsequent pregnancies

B. Low cervical--Advantages

   1. Less chance of hemorrhage or infection

   2. Less danger of uterine rupture in subsequent pregnancies

   3. Better wound healing

XV. Nursing responsibilities for patient having cesarean section

A. Preoperative

   1. Monitor fetal heart and vital signs of mother

   2. Prepare abdomen according to physician's preference and/or hospital procedure

   (NOTE: Usually the abdomen is prepared for surgery from the xiphoid tip to the pubic area and from side to side.)

INFORMATION SHEET

3. Provide additional care as indicated

   (NOTE: In elective surgery, care is provided as for other abdominal surgery; in emergency surgery, care is provided according to patient's condition and needs.)

4. Avoid enemas, sedatives, and narcotics

B. Postoperative

1. Provide care as for other abdominal surgery

2. Observe for vaginal bleeding

3. Check fundus frequently; massage gently until firm

4. Provide aseptic breast and perineal care

5. Assist with manual expression of breast milk until patient is able to breast-feed

XVI. Emergency delivery by nurse

A. Primary concerns

1. Provide safety for mother and infant

2. Know location of emergency delivery pack

3. Obtain assistance if possible

4. Remain with the mother and infant

B. Procedure

1. Provide as much asepsis as possible

2. Allow baby to deliver, providing support for head and body while emerging

3. Check to see that the cord is not around the neck of the infant after the head is delivered

4. Clear the airway and stimulate respirations immediately after the child is born

5. Keep infant warm

   a. Place on the mother's abdomen

   b. Cover

INFORMATION SHEET

6. Clamp cord with two hemostats or tie in two places with tape or ribbon about one inch apart

   (NOTE: Do not use string or thread to tie cord because it may cut through the cord.)

7. Cut cord with sterile scissors

   (NOTE: If sterile scissors are not available, it will not harm the baby to leave the cord uncut after it is tied.)

8. Wait for the placenta to emerge by itself; do not pull on the cord

9. Massage the uterus to keep it firm after the placenta is expelled

   (NOTE: Placing infant to breast aids uterine contraction.)

10. Clean mother and apply perineal pads

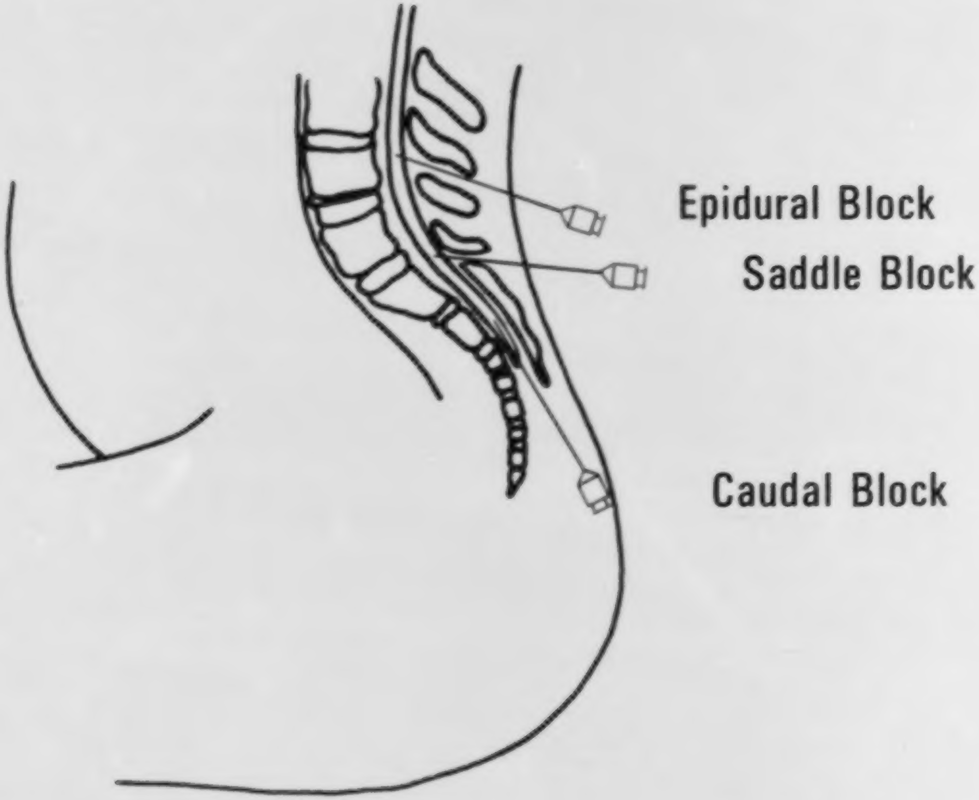
    (NOTE: When proper equipment is not available, draw patient's legs together to minimize bleeding and chance of infection.)

11. Keep mother and infant warm

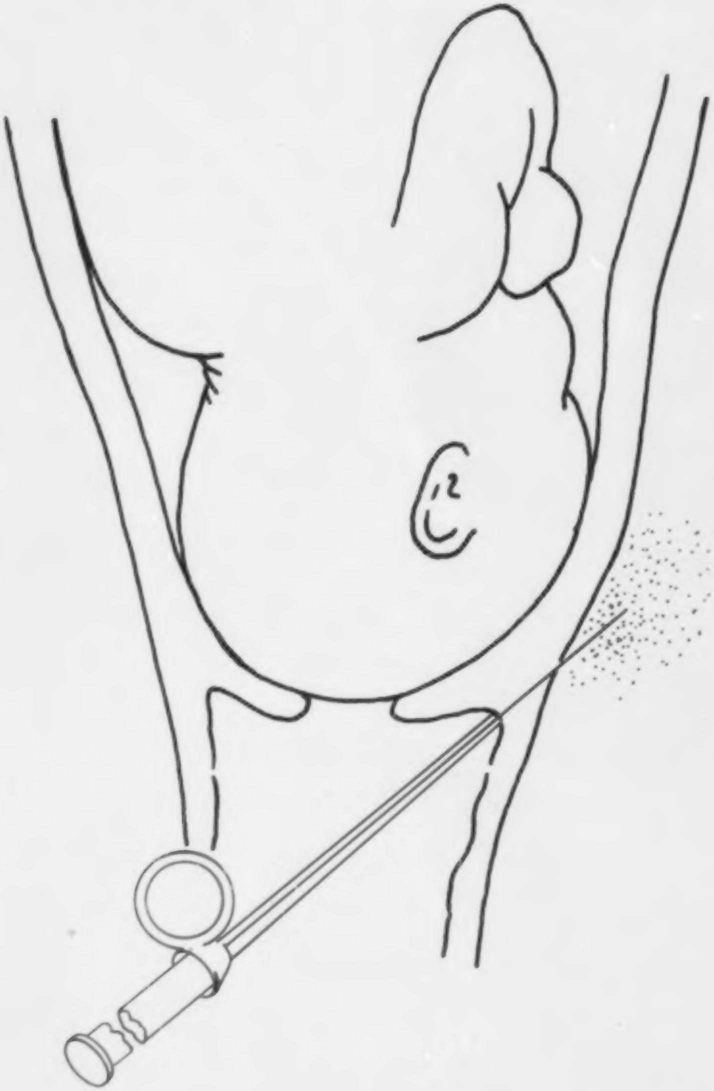
12. Note on patient's record and report when a delivery is unsterile

    (NOTE: There is greater danger of infection in an unsterile birth. Precautions will be necessary to protect the mother and infant and others with whom they may be in contact.)

Saddle, Epidural, and Caudal Blocks

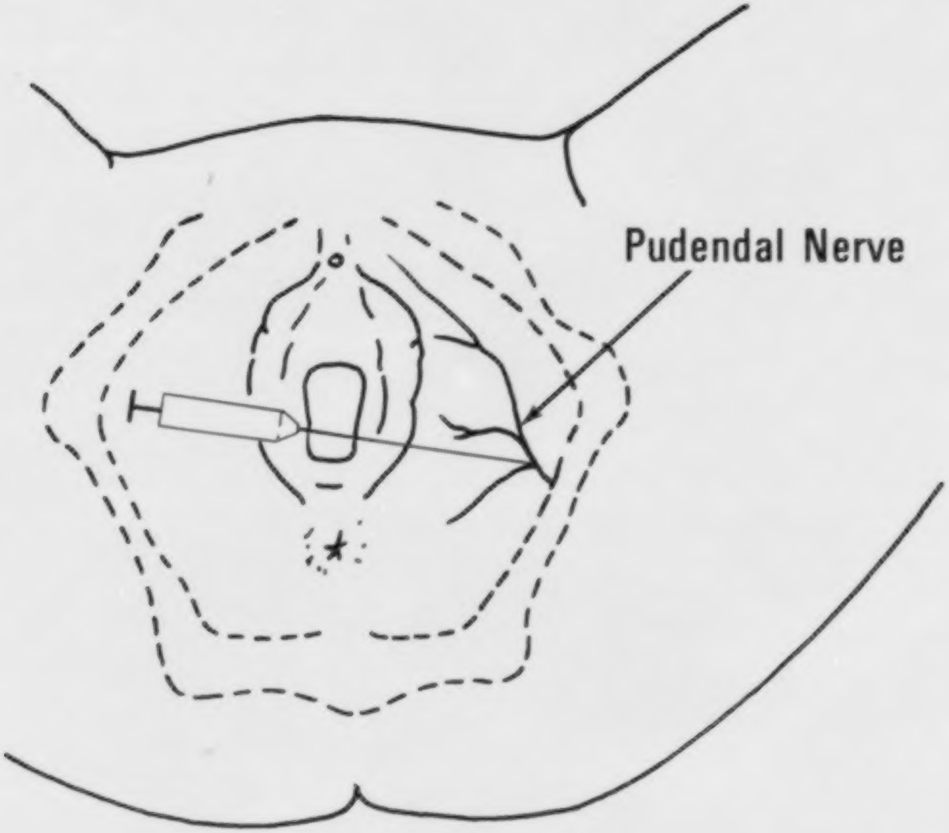

Epidural Block
Saddle Block
Caudal Block

Paracervical Block

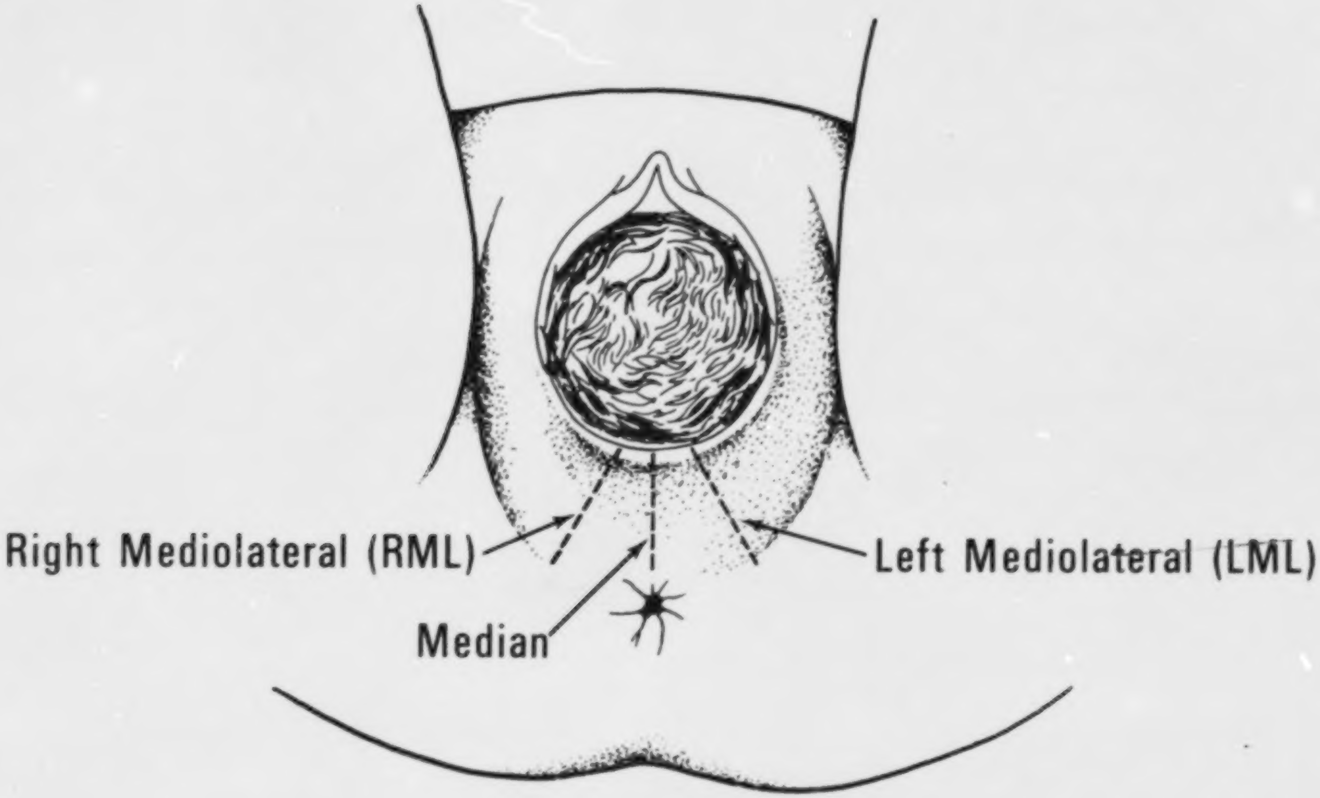


N II - 217-C

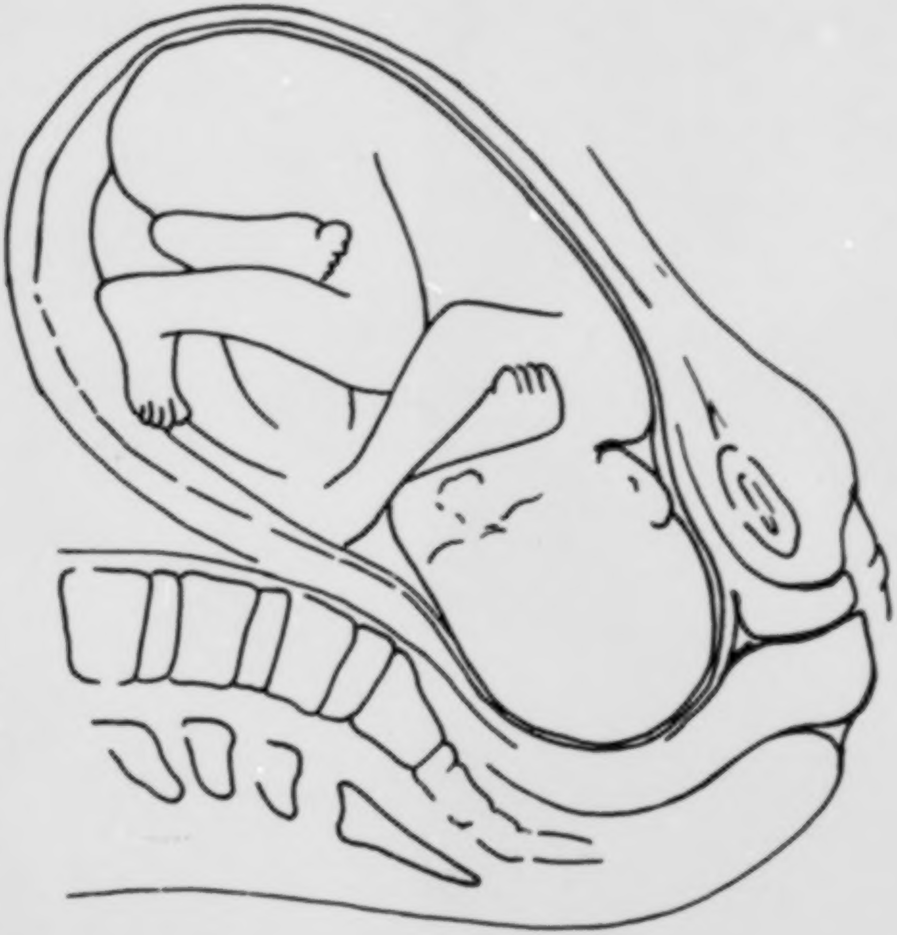
Pudendal Block


Pudendal Nerve

Types of Episiotomies

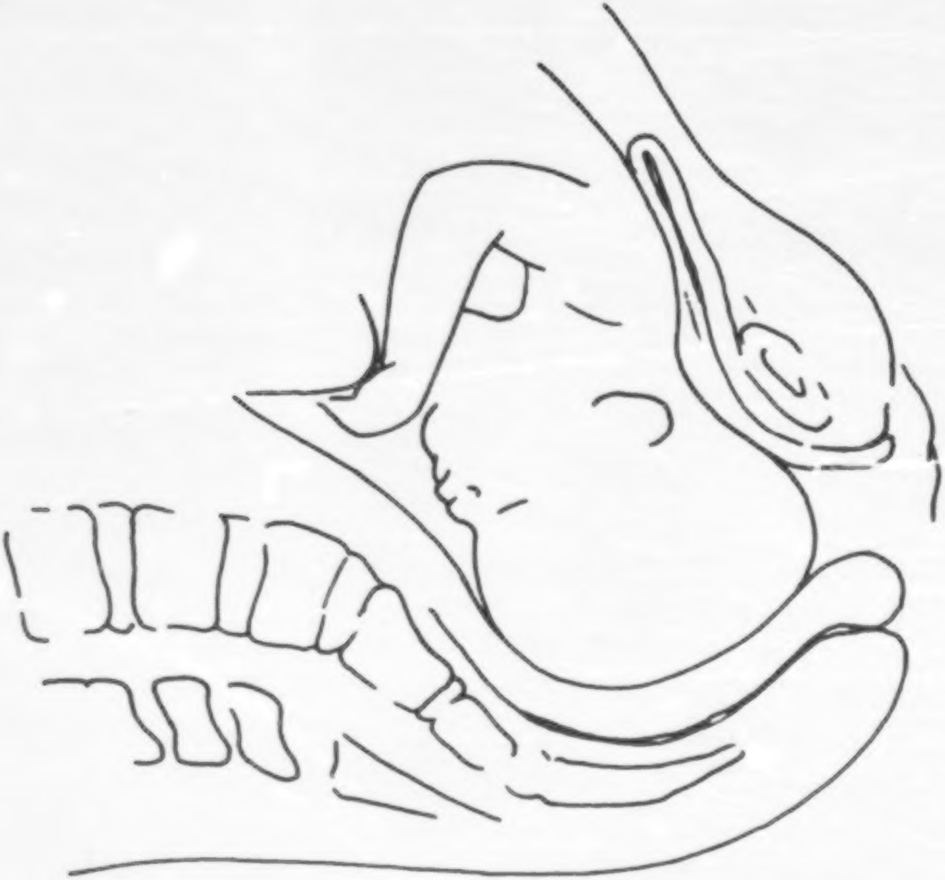

Right Mediolateral (RML)
Left Mediolateral (LML)
Median

Engagement and Descent

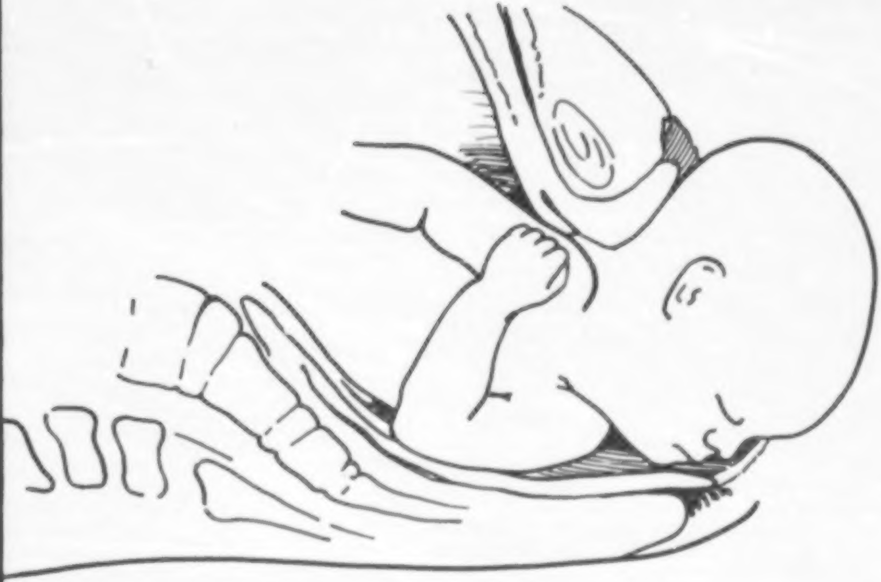


N II - 223-C

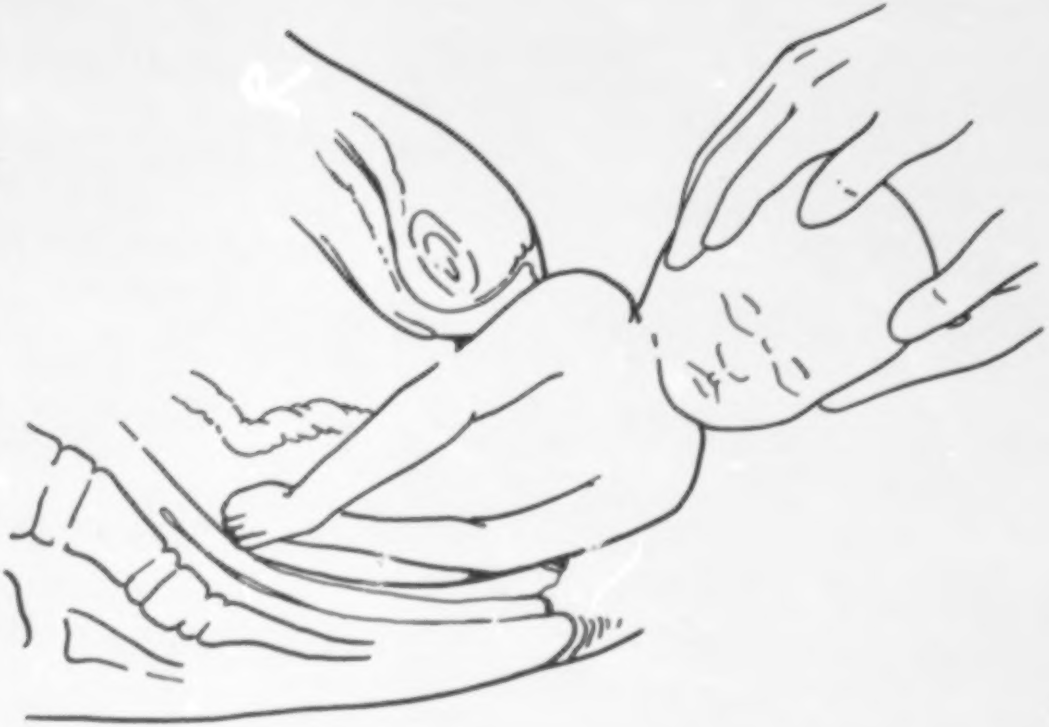
Beginning Extension



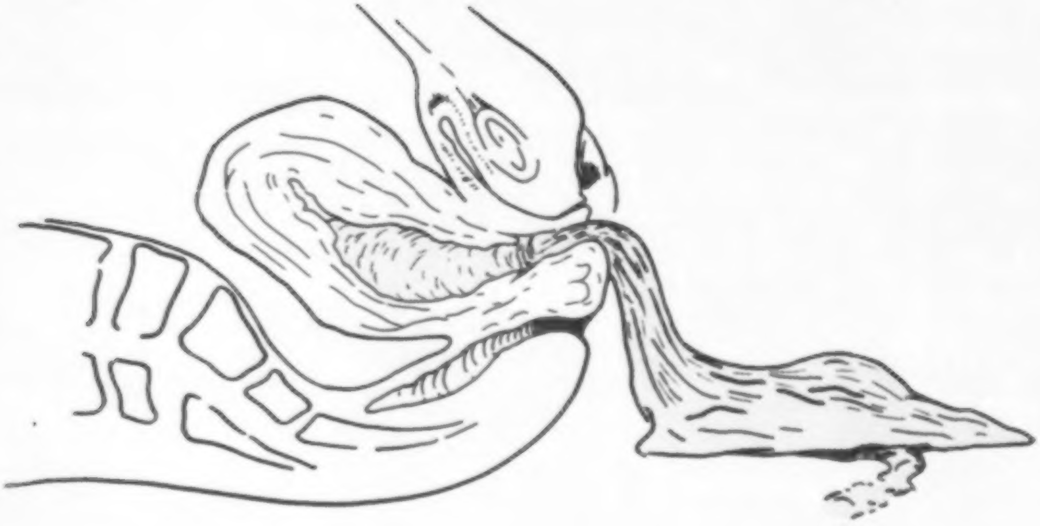
Complete Extension



Rotation



Delivery of the Placenta



Apgar Scoring Chart

Sign	0	1	2
Heart Rate	Absent	Slow (below 100)	Over 100
Respiratory effort	Absent	Slow, irregular	Good, crying
Muscle tone	Flaccid	Some flexion of extremities	Active motion
Reflex irritability			
1. Response to slap on sole of foot	No response	Grimace	Cry, withdrawal of foot
2. Response to catheter in nostril (tested after oropharynx is clear)	No response	Grimace	Cough or sneeze
Color	Blue, pale	Body pink, extremities blue	Completely pink

CARE OF THE PATIENT IN THE DELIVERY ROOM
UNIT IV

TEST

1. Match the terms on the right to the correct definition.

______a. Sensory loss in the saddle area which occurs in a type of caudal anesthesia

______b. Injection of anesthesia into the space outside the dura mater in the lumbar region

______c. Anesthesia induced by intermittent or continuous injection of an anesthetic into the sacral canal

______d. Injection of anesthesia into the area around the cervix through the vagina

______e. Affected with disease

______f. Tear or wound made by tearing

______g. Injection of local anesthesia into the pudendal nerve each side of the perineum near the ischial spine

______h. Medial or lateral incision of the vulva to avoid laceration

______i. Gonorrheal or purulent inflammation of the eye in the newborn

______j. Outer membrane covering the spinal cord

1. Paracervical block
2. Episiotomy
3. Saddle block
4. Laceration
5. Caudal block
6. Ophthalmia neonatorum
7. Morbidity
8. Dura mater
9. Pudendal block
10. Epidural anesthesia

2. List types, advantages, and disadvantages of inhalation anesthesia during childbirth.

a. Types

1)

2)

b. Advantage--

c. Disadvantages

1)

2)

3. List types, advantages, and disadvantages of regional anesthesia during childbirth.

a. Types

1)

2)

3)

b. Advantages

1)

2)

c. Disadvantages

1)

2)

3)

4. Describe preparation of the delivery room for a delivery.

5. Describe the second stage of labor.

   a. Duration

   b. Characteristics

6. Describe the transfer of a patient to the delivery room.

7. Discuss nursing responsibilities during the second stage.

8. Describe the delivery of an infant.

9. Describe the nursing responsibilities for the newborn.

10. Describe the third stage of labor.

    a. Duration

    b. Characteristics

c. Delivery of placenta

11. Describe the completion of delivery room care of the mother.

12. Describe the fourth stage.

    a. Duration

    b. Characteristics

13. Discuss nursing responsibilities during the fourth stage.

14. Distinguish between the two types of cesarean sections.

15. Discuss nursing responsibilities for the patient having a cesarean section.

    a. Preoperative

    b. Postoperative

16. Describe emergency delivery of an infant by a nurse.

CARE OF THE PATIENT IN THE DELIVERY ROOM
UNIT IV

ANSWERS TO TEST

1.
   a. 3
   b. 10
   c. 5
   d. 1
   e. 7
   f. 4
   g. 9
   h. 2
   i. 6
   j. 8

2.
   a. Any two of the following:
      1) Nitrous oxide
      2) Cyclopropane
      3) Ethylene
      4) Trilene
      5) Ether
   b. Causes loss of consciousness so mother is asleep during procedure
   c. Any two of the following:
      1) May depress respirations of mother or neonate
      2) Frequently causes vomiting with possiblity of aspiration
      3) May impair uterine contractions
      4) Requires an anesthetist for administration

3.
   a. Any three of the following:
      1) Spinal
      2) Saddle
      3) Caudal
      4) Paracervical

5) Pudendal

6) Perineal

7) Epidural

b. Any two of the following:

1) Mother awake throughout the procedure

2) Safer for neonate

3) No impairment of contractions

c. Any three of the following:

1) Patient must be able to assume sitting position for administration of saddle or caudal block

2) Patient may have difficulty bearing down after anesthesia

3) Blood pressure and/or respirations may be affected in higher level administration

4) Voiding may be difficult in postpartum period

5) Repeated injections may be necessary

4. Description should include:

a. Delivery room should be prepared before patient is to be transferred

b. When delivery is expected, determine what equipment will be needed

1) Size of gloves for physician and assistant

2) Type of anesthesia

3) Any special instruments the physician prefers

4) Any special problems involving the patient

c. Cap or hair cover, mask, and non-conducting shoes should be worn while preparing equipment

d. Surgical aseptic techniques must be used

e. Sterile packs of equipment are opened and arranged, then covered with sterile cover

f. Incubator is prepared

g. All personnel who enter the delivery room wear hair covers, masks, and non-conducting shoes

h. Physician and assistant scrub as for a surgical procedure and wear sterile gloves and gown

5. Description should include:

a. Duration--From complete dilatation of the cervix through the delivery of the infant

1) Primipara--30 minutes to 3 hours

2) Multipara--5 to 30 minutes

b. Characteristics

1) Increased bloody show

2) Pressure on rectum causing patient to feel desire to defecate

3) Spontaneous bearing-down reflex

4) Contractions almost continuously

5) Perineum begins to bulge

6) Crowning

6. Description should include:

a. Patient is transferred at the beginning of the second stage usually when the physician or charge nurse determines that delivery is imminent

1) A multipara may be transferred before she begins to bear down or have bulging of the perineum

2) A primipara may not deliver for as long as one hour after dilatation is complete; therefore, she will be more comfortable in the labor room

b. Patient can be transferred more easily between contractions

c. Patient should not be encouraged to bear down during transfer and positioning on delivery table

d. Patient's wrists are secured to prevent contamination of the sterile field

- e. The patient's legs are placed in stirrups and covered as needed
    - 1) Both legs should be raised at the same time
    - 2) Stirrups must be adjusted to fit the patient properly
- f. The foot of the table is dropped
- g. The circulating nurse prepares the abdomen, thighs, and entire perineal area
    - 1) The areas are cleansed with soap and water in sequence
        - a) Abdomen beginning at pubic area and moving upward
        - b) Each thigh from the groin laterally
        - c) Sides of perineal area from anterior to posterior
        - d) Center of perineal area from anterior to posterior
    - 2) All cleansed areas are rinsed with water in the same sequence
    - 3) Entire area is sprayed or painted with an antiseptic solution according to the physician's preference or institutional procedure
- h. Sterile drape is placed under the buttocks; legs and abdomen are draped with sterile drapes by the physician
- i. The circulating nurse provides a stool for the physician, places the sterile supply table conveniently, adjusts the lights, and secures any additional supplies
- j. Throughout the procedure one nurse should be responsible for encouraging and assisting the patient as needed unless the patient is given a general anesthetic

7. Discussion should include:
    - a. Coach the mother in proper technique in exerting downward pressure during contractions and relaxing as much as possible between contractions
    - b. Check maternal pulse and blood pressure frequently
    - c. Continue monitoring of contractions and fetal heart
    - d. Provide for comfort as indicated
    - e. Provide emotional support and encouragement

8. Description should include:

   a. As time permits the physician may

      1) Examine the patient vaginally to determine position

      2) Catheterize the patient to insure an empty bladder

      3) Perform an episiotomy

      4) Apply forceps to assist the delivery

      5) Support perineum to prevent laceration

   b. After the head is delivered, the physician checks to see that the umbilical cord is not wrapped around the baby's neck

   c. As the head rotates, the physician uses a rubber syringe to aspirate mucus and fluid from the infant's mouth

   d. The physician continues the delivery, guiding the infant as needed

   e. After delivery the physician may

      1) Place the infant with head lower to clear the airway

      2) Aspirate mouth and nose

      3) Place infant on mother's abdomen

      4) Clamp and cut the cord

   f. Infant is given to nurse for further care

9. Description should include:

   a. Establish and maintain a patent airway

      1) Remove mucus and secretions from nose and mouth by wiping and/or suction

      2) Stimulate respiration as needed

         a) Stroke chest and back

         b) Administer oxygen

         c) Resuscitate as indicated

      3) Position baby to prevent aspiration

   b. Provide for warmth

c. Identify properly

d. Clamp cord and observe for bleeding

e. Provide prophylactic treatment for eyes

f. Administer injection of vitamin K as prescribed

g. Determine Apgar score within first five minutes

10. Description should include:

a. Duration--After delivery of infant to delivery of placenta, usually 5 to 10 minutes

b. Characteristics

1) Gush of blood from the vagina

2) Descent of umbilical cord

3) Fundus becoming firm

4) Spontaneous bearing down

c. Delivery of the placenta

1) After delivery of the infant, the uterus begins to contract, which helps to separate the placenta from the uterine wall

2) After the expulsion of the placenta, the uterus should be felt as a firm mass at the level of the umbilicus

a) Duncan mechanism--Maternal surface appears first

b) Schultze mechanism--Fetal surface appears first

c) Retained--All or a portion of the placenta remains in utero

3) Before and/or after the expulsion of the placenta, the physician may order the administration of an oxytocic preparation such as Pitocin

4) The placenta is checked carefully to be sure that it is intact

5) The physician inspects the birth canal for any lacerations and sutures the episiotomy and lacerations as required

11. Description should include:

a. Head and foot of delivery table are realigned

b. Perineal pads are applied from front to back and secured

   c. Patient is cleansed as necessary and dressed in clean gown

   d. After transfer to a stretcher, the patient is covered and taken to a recovery room or to her unit

12. Description should include:

   a. Duration--From the completion of the birth process until postpartum condition is stabilized, usually 1 to 2 hours

   b. Characteristics

      1) Recovery from anesthesia

      2) Stabilization of vital signs, bleeding, and fundal muscle tone

      3) Intense emotional reaction of mother

      4) Sudden severe chill due to the sudden change in intra-abdominal pressure

13. Discussion should include:

   a. Bathe and give perineal care as needed

   b. Maintain patent airway until recovered from anesthesia

   c. Monitor vital signs and intravenous administrations frequently

   d. Palpate fundus frequently for firmness and location

      1) Fundus should remain firm and at or below the level of the umbilicus

      2) Massage gently until firm when fundus relaxes or becomes boggy

      3) Notify physician or charge nurse immediately if massage fails to firm fundus

   e. Observe vaginal bleeding and for signs of shock

   f. Observe for elimination and/or bladder distention

   g. Note and report any unusual symptoms

   h. Give medications as prescribed

   i. Provide mouth care and personal care as indicated

j. Maintain patient safety as necessary

k. Provide emotional support as indicated

    1) Reduce disturbances to provide rest

    2) Permit patient full expression of her feelings

    3) Allow her to see her baby and family when she is ready

14. Discussion should include:

    a. Classical--Uterus is incised in the midline

        1) Advantage--Performed quickly

        2) Disadvantage--Greater danger of rupturing the scar in subsequent pregnancies

    b. Low cervical--Advantages

        1) Less change of hemorrhage or infection

        2) Less danger of uterine rupture in subsequent pregnancies

        3) Better wound healing

15. Discussion should include:

    a. Preoperative

        1) Monitor fetal heart and vital signs of mother

        2) Prepare abdomen according to physician's preference and/or hospital procedure

        3) Provide additional care as indicated

        4) Avoid enemas, sedatives, and narcotics

    b. Postoperative

        1) Provide care as for other abdominal surgery

        2) Observe for vaginal bleeding

        3) Check fundus frequently; massage gently until firm

        4) Provide aseptic breast and perineal care

        5) Assist with manual expression of breast milk until patient is able to breast-feed

16. Description should include:

    a. Primary concerns

        1) Provide safety for mother and infant

        2) Know location of emergency delivery pack

        3) Obtain assistance if possible

        4) Remain with the mother and infant

    b. Procedure

        1) Provide as much asepsis as possible

        2) Allow baby to deliver, providing support for head and body while emerging

        3) Check to see that the cord is not around the neck of the infant after the head is delivered

        4) Clear the airway and stimulate respirations immediately after the child is born

        5) Keep infant warm

            a) Place on the mother's abdomen

            b) Cover

        6) Clamp cord with two hemostats or tie in two places with tape or ribbon about one inch apart

        7) Cut cord with sterile scissors

        8) Wait for the placenta to emerge by itself; do not pull on cord

        9) Massage the uterus to keep it firm after the placenta is expelled

        10) Clean mother and apply perineal pads

        11) Keep mother and infant warm

        12) Note on patient's record and report when a delivery is unsterile

CARE OF THE POSTPARTUM MOTHER
UNIT V

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to describe normal body changes and nursing care for the postpartum period. The student should be able to list factors concerning postpartum complications and discuss advantages and disadvantages of breast-feeding and rooming-in. The student should be able to demonstrate the ability to give a postpartum bed bath and to assist with breast-feeding. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with postpartum to the correct definitions.
2. Describe the normal body changes in puerperium.
3. Discuss nursing implications in the puerperium.
4. List causes, symptoms, treatment, and nursing implications for postpartum complications.
5. Discuss the support of the grieving mother.
6. List symptoms and nursing implications of postpartum psychosis.
7. List six methods of contraception.
8. Discuss the advantages and disadvantages of rooming-in.
9. Discuss the advantages and disadvantages of breast-feeding.
10. Describe how the nurse may assist the mother with breast-feeding.
11. Demonstrate the ability to:
    a. Give a postpartum bed bath.
    b. Assist with breast-feeding.

CARE OF THE POSTPARTUM MOTHER
UNIT V

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information and job sheets.

  C. Make transparencies.

  D. Discuss terminal and specific objectives.

  E. Discuss information sheet.

  F. Demonstrate and discuss procedures outlined on the job sheets.

  G. Provide any special equipment used in the facility and demonstrate its use.

  H. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Demonstrate the ability to accomplish the procedures outlined on the job sheets.

  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Transparency master: TM 1--Uterine Involution

D. Job sheets

1. Job Sheet #1--Give Postpartum Bed Bath
2. Job Sheet #2--Assist with Breast-feeding

E. Test

F. Answers to test

II. References:

A. Bleier, Inge J. *Maternity Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1971.

B. Broadribb, Violet, and Charlotte Corliss. *Maternal-Child Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

C. Friesner, Arlyne, and Beverly Raff. *Obstetric Nursing.* Flushing, New York: Medical Examination Publishing Company, Inc., 1974.

D. Ingalls, A. Joy, and M. Constance Salerno. *Maternal and Child Health Nursing.* St. Louis, Missouri: The C. V. Mosby Company, 1971.

E. Lerch, Constance. *Maternity Nursing.* St. Louis, Missouri: The C. V. Mosby Company, 1974.

F. Soffer, Rae-ann. "The Basics of Breastfeeding." *Nursing Care,* March 1974.

III. Other materials:

A. Films

1. "Breast Feeding Your Baby." Ross Laboratories, Audio Visual Library.
2. "Postpartum Hemorrhage." Ortho Pharmaceutical Corporation.

B. Filmstrips

1. "Infant Care - Breast Feeding." Trainex Corporation
2. "Postpartum Care." Trainex Corporation.
3. "Modifications of the Puerperium." Medical Electronic Education Services, Inc.

C. Chart--"The Mammary Glands and Breast Feeding." Clinical Education Aids, no. 10. Ross Laboratories.

CARE OF THE POSTPARTUM MOTHER
UNIT V

INFORMATION SHEET

I. Terms and definitions

   A. Postpartum--Following childbirth

   B. Involution--Return of the uterus to its normal size following delivery

   C. Puerperium--Six to twelve week period from the end of labor to the complete involution of the uterus and healing of pelvic structures

   D. Engorged--Distended or completely filled

   E. Prolactin--Hormone, secreted by the anterior pituitary, which stimulates lactation

   F. Lactogenic--Inducing the secretion of milk

   G. Lactation--Formation and secretion of milk

   H. Colostrum--Watery, yellowish fluid secreted by the breasts after the birth of a child; acts as a laxative which aids in expelling meconium

   I. Lochia--Postpartum uterine discharge consisting of red and white blood cells, fatty epithelial cells, shreds of endometrium, and bacteria

   J. Nullipara--Woman who has never borne a child

   K. Preparous--Before pregnancy

   L. Afterpains--Pain from uterine contractions following delivery

   M. Venous stasis--Slowing or cessation of flow of blood in the veins

   N. Postpartum psychosis--Severe impairment of mental function following childbirth

   O. Postpartum "blues"--Temporary depression following childbirth believed to be due to hormonal changes and emotional stress

II. Normal body changes

   A. Breasts

      1. Colostrum is secreted the first two or three days; then secretion of milk begins and breasts become engorged

      2. Estrogen and progesterone secreted by the placenta during pregnancy inhibit production of prolactin or lactogenic hormone

INFORMATION SHEET

   3. Breasts may become swollen, hard, red, and painful
   4. Incomplete emptying of breast decreases milk secretion

B. Uterus (Transparency 1)

   1. Uterus gradually becomes smaller during the period of involution and descends into the pelvic cavity; by the tenth postpartum day it should not be palpable above the symphysis pubis
   2. Lining sloughs off and is discharged as lochia
      a. Lochia rubra--Reddish discharge first four days
      b. Lochia serosa--Brownish discharge fourth to tenth day
      c. Lochia alba--Yellowish or white discharge after tenth day
   3. Persistent reddish color after fourth or fifth day indicates that involution is not taking place or that placental fragments have been retained

C. Cervix

   1. It is soft, flabby, and partly open
   2. Muscle begins to regenerate and close os after one week
   3. Small lacerations may heal spontaneously or require cauterization later
   4. External os remains somewhat wider than in nullipara

D. Perineal area

   1. Vagina recovers slowly, but muscle tone never returns to the preparous state
   2. Labia lose their cushion of fat and may become flabby
   3. Perineal tone returns slowly over a six to eight week period

E. Abdomen

   1. Muscles remain soft and flabby for some time
   2. Striae gradually fade to silvery white but do not disappear
   3. Separation of abdominal muscles may occur due to loss of muscle tone

INFORMATION SHEET

4. Multipara may experience afterpains for three to four days

F. Urinary tract

1. Bladder has increased capacity and the urge to empty it may be diminished due to stretching or anesthesia and analgesics

2. Bladder may fail to empty completely, which increases the incidence of bladder infections

3. Urine output is greatly increased the first 24 to 48 hours as the body excretes fluid retained during pregnancy

G. Circulatory system

1. Blood loss during delivery decreases blood volume

2. Moderate anemia may occur due to blood loss

3. White cell count increases during labor and early puerperium

4. Fibrinogen level is elevated

5. Pulse rate slows after delivery

6. Diaphoresis may occur for several weeks

H. Hormonal function

1. Non-nursing mother

    a. Ovulation occurs in three to six weeks

    b. Menstruation resumes in five to eight weeks

2. Nursing mother

    a. Return of menstrual cycle varies; may not occur until after weaning

    b. Breast-feeding is not a reliable form of contraception due to variations of hormone production

I. Gastrointestinal system

1. Appetite for food and fluid is usually good

2. Bowel function may be delayed due to

    a. Decreased intake during labor

    b. Flaccid abdominal muscles

INFORMATION SHEET

c. Decreased pressure from uterus

d. Fear of pain from episiotomy or hemorrhoids

3. Increased caloric and fluid intake is essential for the nursing mother

4. Limiting fluid intake probably does not decrease lactation in the mother who is not nursing

J. Emotional changes

1. Need for rest and sleep is great in the immediate postpartum period

2. The mother is passive and dependent the first two or three days, but then becomes more independent

3. Following delivery it is not unusual for mood changes to occur frequently with little apparent cause for exhilaration or depression

4. She may feel inadequate and unsure of her ability to cope with her new role

5. Some mothers experience depression or postpartum "blues" in varying degrees which may be due in part to physical changes accompanying pregnancy and childbirth

(NOTE: If symptoms of depression persist or become severe, the physician should be notified.)

III. Nursing implications in the puerperium

A. Purposes of daily care

1. Note and treat any complications

2. Observe rate of involution

3. Provide for comfort, cleanliness, rest, and quiet

4. Prevent infection and thrombophlebitis

5. Instruct patient in care of herself and the infant using terminology she can understand

B. Breasts

1. Cleanse breasts before bathing the rest of the body

(NOTE: Breasts are bathed first to prevent carrying germs from the nose or mouth into the open skin glands of the breasts.)

INFORMATION SHEET

2. Wash breasts in a circular motion beginning at the nipple and moving outward
3. Support breasts with a binder or brassiere if nursing
4. Assist as needed to be sure the baby sucks well and empties the breast
5. Pump breasts as needed to empty them

C. Fundus and lochia

1. Palpate fundus daily to determine the height (Transparency 1)
    a. The first day after delivery it is at the level of the umbilicus
    b. By the tenth day the fundus has descended into the pelvis and can no longer be palpated
2. Massage fundus gently as needed to keep it firm; do not massage fundus if it is already firm
3. Report immediately if massage fails to firm fundus
4. Note color, amount, and character of lochia
    a. Clots are abnormal and should be reported as well as persistent lochia rubra after fourth day
    b. Less discharge may occur in primiparas, nursing mothers, physically active multiparas, and those delivered by cesarean section
    c. Lochia may increase when patient changes position; reassure her that this is normal and expected
5. Instruct patient to notify the physician if lochia rubra persists after dismissal from hospital or reoccurs after lochia alba

D. Perineal area

1. Perineal care is performed by the nurse until the patient is able to do so
2. Washing with warm water reduces the chances of infection and eases perineal discomfort

INFORMATION SHEET

3. Perineal care should be provided each time the patient voids or defecates

4. Patients with an indwelling catheter should have perineal care every three hours to prevent growth of bacteria

5. Aseptic technique is used in perineal care; instruct patient in proper use of cleansing materials

    a. Wash hands before care

    b. Remove perineal pad from front to back

    c. Use each tissue for one cleansing stroke, always wiping from front to back

    d. Use the equipment provided for her; do not loan to or borrow from other patients

    e. Avoid touching the side of the perineal pad that goes next to the perineum

    f. Wash hands and replace equipment after securing the pad

6. Administer heat, cold, analgesic spray, or ointment as prescribed

7. Observe perineum and sutures for signs of infection or hematoma

E. Nutrition

1. Good nutrition promotes recovery, aids in resisting infection, and improves the quality and quantity of milk

2. An additional intake of approximately 1000 calories will be needed by the nursing mother

3. Fluid intake of 2500 to 3000 cc is essential for the nursing mother; adequate fluid intake in the non-nursing mother aids adequate urination and defecation

4. Between-meal snacks are beneficial and may be needed to provide necessary food and fluid intake

F. Emotional support

1. Provide for needed rest

2. Provide privacy for patient and her husband; his emotional and physical support is essential

INFORMATION SHEET

3. Assist as needed in her personal care

4. Reassure and instruct the mother in the care of the infant

5. Provide opportunity for her to express fears or doubts, to request assistance, or to ask questions

IV. Postpartum complications

A. Hemorrhage

1. Causes

a. Uterine atony

(NOTE: Ninety percent of postpartum hemorrhage is due to uterine atony.)

b. Vaginal and cervical lacerations

c. Retention of placenta fragments

d. Clotting defects of the blood

e. Multiple births

f. Multiparity

2. Symptoms

a. Bleeding in excess of 500 cc

(NOTE: Normal blood loss during and after delivery is from 50 to 300 cc.)

b. Rapid and/or thready pulse

c. Decrease in blood pressure

d. Pallor

e. Chilliness

f. Dyspnea and air hunger

g. Restlessness

h. Disturbed vision

i. Unconsciousness

INFORMATION SHEET

3. Treatment
    a. Massage fundus until firm
    b. Administer oxytocic and/or vitamin K
    c. Repair lacerations when present
    d. Fluid and blood replacement as indicated
    e. Surgery as necessary
        1) D and C
        2) Hysterectomy
4. Nursing implications
    a. Observe closely to aid in preventing hemorrhage
    b. Use correct technique in massaging fundus
    c. Observe amount and characteristics of lochia
    d. Administer prescribed medications
    e. Check vital signs
    f. Observe food and fluid intake
    g. Maintain aseptic technique
    h. Assist with careful and progressive activity

B. Puerperal infection

1. Causes
    a. Introduction of pathogenic organisms into the genital tract through poor technique, improperly sterilized equipment, and careless rectal or vaginal examinations
    b. Care by persons with an upper respiratory infection or harboring streptococci or staphylococci organisms in nasopharynx
    c. Contact with another infected patient
    d. Local lesion of perineum, vagina, cervix, or endometrium

INFORMATION SHEET

2. Symptoms
    a. Changes in lochia--Foul smelling, profuse or scanty amount
    b. Continuous temperature over 100.4°F (38°C) for two days or more
    c. Chilling
    d. Rapid pulse and respiration
    e. Uterus large and tender
    f. Severe and prolonged afterbirth pains
    g. Headache
    h. Insomnia
    i. Anorexia
3. Treatment
    a. Isolation as needed
    b. Fowler's position to promote drainage
    c. Oxytocics
    d. Antibiotics
    e. Supportive therapy
4. Nursing implications
    a. Maintain aseptic techniques
    b. Observe for drainage
    c. Carry out isolation technique if prescribed
    d. Administer prescribed medications
    e. Report frequently on infant's condition if mother is isolated
    f. Provide encouragement and support

INFORMATION SHEET

C. Thrombophlebitis

1. Causes
    - a. Venous stasis
    - b. Clotting defects
    - c. Excess fibrinogen
2. Symptoms
    - a. Chills and fever
    - b. Pain in leg
    - c. Leg feels hot to touch
    - d. Swelling in one leg
    - e. Red streaks or local inflammation
3. Treatment
    - a. Anticoagulants
    - b. Prothrombin and clotting times
    - c. Applications of heat or cold
    - d. Bed rest
    - e. Cautious ambulation
    - f. Elastic bandages to legs
4. Nursing implications
    - a. Decrease incidence with early ambulation
    - b. Observe carefully for abnormal lochia
    - c. Elevate affected leg, being careful to support entire leg (NOTE: Do not place pillows ONLY under the knees.)
    - d. Support bedcovers with a cradle
    - e. Avoid any rubbing or massage of affected leg

INFORMATION SHEET

f. Maintain bed rest or ambulation as prescribed

g. Assist with position changes and deep breathing to avoid further complications

h. Provide encouragement and reassurance

i. Instruct patient to

   1) Avoid remaining in one position too long

   2) Avoid crossing legs when sitting or lying

   3) Wear elastic stockings as prescribed

V. Support of the grieving mother

   A. Remember that a mother coping with a handicapped infant or the loss of an infant by death or adoption requires a great deal of emotional support and understanding

   B. Provide time and place for the bereaved patient to be with her husband, family, and friends

   C. Transfer patient to another area of the hospital when indicated

   D. Encourage patient to express her feelings freely by listening

   E. Provide information concerning the infant; evading questions or lying to the patient concerning the infant is inexcusable

   F. Do not avoid the patient and/or family because of their grief

VI. Postpartum psychosis

   A. Symptoms

      1. Insomnia

      2. Confusion

      3. Irritability

      4. Apathy and depression

      5. Delusions and hallucinations

      6. Delirium

      7. Any unusual behavior

INFORMATION SHEET

B. Nursing implications

1. Reduce stress of labor and delivery for all mothers

    a. Instruct adequately and explain all procedures

    b. Provide reassurance and emotional support

2. Provide necessary instruction to aid in assuming a new role

3. Assist in early detection of symptoms which indicate difficulty in adapting to new role

4. Prevent injury to mothers, their infants, or other patients through careful observation and nursing care of mothers who behave in unusual manner

5. Report any unusual behavior to the physician immediately

VII. Contraceptive methods

A. Condom

(NOTE: A thin sheath is worn over the penis during coitus.)

B. Coitus interruptus

(NOTE: The penis is withdrawn from the vaginal canal prior to ejaculation.)

C. Spermicidal preparations

(NOTE: Preparations of cream, foam, gels, or suppositories are used to form a barrier over the cervix to keep sperm from entering uterus.)

D. Diaphragm

(NOTE: A cap is inserted to cover the cervix and keep sperm from entering the uterus.)

E. Intrauterine device; IUD

(NOTE: A device is placed permanently in the uterus.)

F. Oral

(NOTE: Pills of synthetic hormones are taken as prescribed.)

G. Rhythm

(NOTE: Abstinence from coitus is maintained during the woman's fertile periods.)

INFORMATION SHEET

H. Silastic implant

(NOTE: A ring of progestogen is inserted into the vagina with the hormone absorbed through the vaginal wall.)

I. Douche

(NOTE: An internal irrigation of the vagina immediately after intercourse is considered relatively ineffective.)

J. Tubal ligation

(NOTE: The fallopian tubes are occluded by surgical ligation or by electrocoagulation.)

K. Vasectomy

(NOTE: Clamping or clipping of the vas deferens is performed.)

VIII. Rooming-in

A. Advantages

1. Provides mother and infant with a natural mother-child relationship as soon as the mother is ready
2. Affords opportunity for on-demand feeding
3. Facilitates instruction of mothers and fathers in infant care
4. Strengthens parent-child relationship
5. Reduces incidence of cross-infection among infants

B. Disadvantages

1. May be impractical or impossible to carry out effectively if the mother is experiencing problems
    a. Recovery from difficult labor or delivery
    b. Recovery from general anesthesia
    c. Complications in puerperium
    d. Marital discord
    e. Disappointment in sex of child
2. May be difficult or impossible in cases of neonate distress
    a. Conditions requiring special attention
    b. Prematurity

INFORMATION SHEET

c. Defects or abnormalities

IX. Breast-feeding

A. Advantages

1. Requires little preparation; more convenient

2. Is more easily digested

3. May increase infant's resistance to respiratory and gastrointestinal infection

4. Provides milk free from harmful bacteria

5. Causes fewer allergy reactions

6. Stimulates secretion of oxytocic hormone in the mother

7. Provides pleasure for mother and infant

B. Disadvantages

1. May be too confining for the mother

2. Transmits certain drugs through the milk

(NOTE: These might include diuretics, steroids, reserpine, coumarin, antithyroid drugs, and some chemotherapeutic agents.)

3. Contraindicated in some communicable diseases such as syphilis, tuberculosis, or other highly contagious diseases

4. May be distressful to some mothers

5. May provide insufficient amount of milk

X. Assisting the mother with breast-feeding

A. Instruct mother to wash her hands each time she handles the baby and particularly before each feeding

B. Provide for mother's comfort

1. In first few postpartum days she may prefer to lie down because of perineal tenderness; assist her to a side-lying position with one arm raised and head supported on one pillow

INFORMATION SHEET

2. She may prefer to sit in a chair with her feet on a footstool and with the baby supported on a pillow

C. Provide for baby's first feeding within eighteen hours after birth

(NOTE: At this time the breast will contain colostrum, which is high in protein and low in carbohydrates and fats.)

D. Instruct mother that infants have a *rooting reflex*, an instinctive movement to turn toward anything warm which touches lips or cheeks

(NOTE: If the mother touches one of the infant's cheeks with her breast and the other with her fingers, the infant will be confused and will not know which way to turn.)

E. Make sure infant holds all or most of the areola in his/her mouth in order to suckle properly

(NOTE: The mother may have to help form the nipple by placing a finger on each side of the areola to compress the breast slightly.)

F. Do not give breast-fed babies formula or glucose in water between breast-feedings unless prescribed

(NOTE: These supplementary feedings may be sufficient to depress desire for breast-feeding at the next scheduled feeding.)

G. Allow breast-fed infants to determine their own feeding schedules when possible

(NOTE: Breast-fed babies gain weight at a slower rate than formula-fed babies.)

H. Have the mother empty breast as often as eight to ten times per day at first to establish an adequate supply of milk

I. Allow the infant to nurse on both breasts to stimulate production and to prevent nipple soreness for the first few feedings

J. Have the mother manually express a small amount of excess milk each time before nursing the infant if the breasts are quite full

(NOTE: This may occur at the first morning feeding after the production of milk is ample.)

K. Encourage the mother to maintain adequate food and fluid intake to be able to produce sufficient milk

L. Discourage supplementary feedings

1. Suckling more often usually increases the supply

2. Regular stimulation of the breasts is necessary to increase or maintain lactation

CARE OF THE POSTPARTUM MOTHER
UNIT V

JOB SHEET #1--GIVE POSTPARTUM BED BATH

I. Equipment

  A. Basin

  B. Towel and washcloth

  C. Soap and/or antibacterial cleanser

  D. Bath blanket

  E. Bra or breast binder

  F. Breast pads

II. Procedure

  A. Wash hands

  B. Assemble equipment

  C. Identify patient and explain procedure

  D. Provide privacy

  E. Replace top covers with bath blanket

  F. Wash the breast area first

    1. Use antibacterial cleanser such as pHisoHex according to hospital procedure

    2. Cleanse in a circular manner from the nipple outward

    3. Observe the nipples and breasts for inversion, fissures, inflammation, and engorgement in a nursing mother

    4. Dry the breast area and cover with a clean towel

    5. Instruct the mother to follow the same procedure

  G. Continue the bath in the usual manner by washing the face, neck, hands, arms, axillae, abdomen, and back

  H. Give a backrub

  I. Apply bra or breast binder and pads

JOB SHEET #1

J. Wash the feet and legs

(CAUTION: Do not rub vigorously or massage because of the danger of embolus.)

K. Provide perineal care

L. Change bed linen as indicated

M. Provide for patient comfort

N. Clean and replace equipment

O. Wash hands

P. Record

CARE OF THE POSTPARTUM MOTHER
UNIT V

JOB SHEET #2--ASSIST WITH BREAST-FEEDING

I. Equipment

   A. Prepackaged towel

   B. Sponges

   C. Antiseptic solution

II. Procedure

   A. Identify patient and provide privacy

   B. Position mother

      1. Turn to one side with a pillow at her back and one under her head

      2. Assist to sitting position in bed or to get up in a chair

   C. Have mother wash her hands with soap or detergent and water

   D. Instruct mother not to touch anything after handwashing except necessary articles such as clothing and bedcovers

   E. Provide packaged towel or sponge saturated with antiseptic solution for mother to wipe her hands just prior to receiving infant

   F. Wash hands before picking up infant

   G. Bring infant and sponges saturated with antiseptic solution to mother

   H. Instruct mother to wipe her hands with towel, then to wipe breast with sponges, using customary circular motion

   I. Position infant

   J Instruct mother to touch infant's cheek to her breast to encourage infant to seek the nipple

   K. Remain with the mother as indicated

      1. Infant should be allowed to nurse for two or three minutes at a time the first day

      2. Gradually increase nursing time depending on the state of the nipples and the infant's desires

JOB SHEET #2

  3. Cracks or fissures may be caused by failing to get enough nipple and areola in the infant's mouth and by permitting the infant to nurse too long at one time

  4. Most of the milk in one breast can be obtained in ten minutes of nursing

  5. Maximum time to permit infant to nurse should be twenty minutes

L. Avoid pulling the infant from the breast when nursing is terminated; pull down on the chin or corner of infant's mouth to release the suction on the breast

M. Hold infant over shoulder or in sitting position to favor eructation (burping) of air bubbles

N. Return infant to crib or nursery

O. Assist mother as needed

  1. Make sure breast is empty; use breast pump if necessary

  2. Replace bra

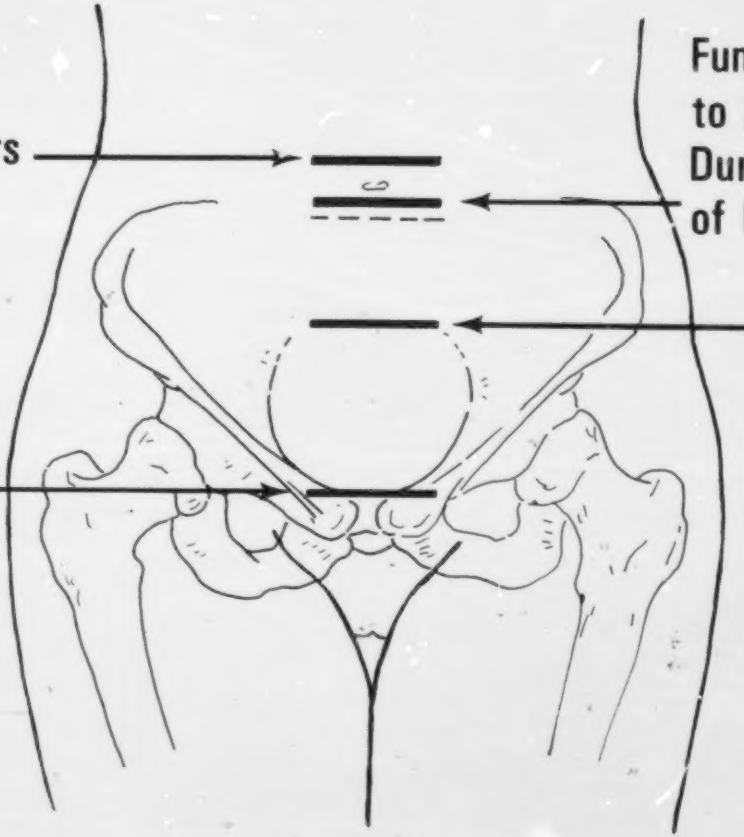
  3. Return to bed

P. Provide for comfort

Q. Wash hands

R. Record

Uterine Involution



End of 24 Hours

Fundus of Uterus Rises to Area of Umbilicus During Fourth Stage of Labor

Fourth Day

Nonpalpable by Tenth Day

CARE OF THE POSTPARTUM MOTHER
UNIT V

TEST

1. Match the terms on the right to the correct definition.

______a. Severe impairment of mental function following childbirth

______b. Formation and secretion of milk

______c. Slowing or cessation of flow of blood in the veins

______d. Watery, yellowish fluid secreted by the breasts after the birth of a child; acts as a laxative which aids in expelling meconium

______e. Following childbirth

______f. Return of the uterus to its normal size following delivery

______g. Six to twelve week period from the end of labor to the complete involution of the uterus and healing of pelvic structures

______h. Pain from uterine contractions following delivery

______i. Before pregnancy

______j. Postpartum uterine discharge consisting of red and white blood cells, fatty epithelial cells, shreds of endometrium, and bacteria

______k. Distended or completely filled

______l. Hormone, secreted by the anterior pituitary, which stimulates lactation

______m. Woman who has never borne a child

______n. Inducing the secretion of milk

______o. Temporary depression following childbirth believed to be due to hormonal changes and emotional stress

1. Postpartum
2. Preparous
3. Lactation
4. Postpartum psychosis
5. Puerperium
6. Prolactin
7. Colostrum
8. Nullipara
9. Postpartum "blues"
10. Venous stasis
11. Involution
12. Lochia
13. Afterpains
14. Lactogenic
15. Engorged

2. Describe the normal body changes in puerperium.

   a. Emotional changes

   b. Cervix

   c. Gastrointestinal system

   d. Breasts

e. Circulatory system

f. Perineal area

g. Uterus

h. Abdomen

i. Hormonal function

j. Urinary tract

3. Discuss nursing implications in the puerperium.

   a. Purposes of daily care

   b. Emotional support

c. Breasts

d. Nutrition

e. Fundus and lochia

f. Perineal area

4. List causes, symptoms, treatment, and nursing implications for the following postpartum complications.

   a. Thrombophlebitis

      1) Causes

      2) Symptoms

      3) Treatment

      4) Nursing implications

b. Hemorrhage

1) Causes

2) Symptoms

3) Treatment

4) Nursing implications

c. Puerperal infection

1) Causes

2) Symptoms

3) Treatment

4) Nursing implications

5. Discuss the support of the grieving mother.

6. List symptoms and nursing implications of postpartum psychosis.

   a. Symptoms

   b. Nursing implications

7. List six methods of contraception.
   a.
   b.
   c.
   d.
   e.
   f.
8. Discuss the advantages and disadvantages of rooming-in.
   a. Advantages

   b. Disadvantages

9. Discuss the advantages and disadvantages of breast-feeding.
   a. Advantages

b. Disadvantages

10. Describe how the nurse may assist the mother with breast-feeding.

11. Demonstrate the ability to:

a. Give a postpartum bed bath.

b. Assist with breast-feeding.

(NOTE: If these have not been accomplished prior to the test, ask the instructor when the above activities should be completed.)

CARE OF THE POSTPARTUM MOTHER
UNIT V

ANSWERS TO TEST

1. a. 4
   b. 3
   c. 10
   d. 7
   e. 1
   f. 11
   g. 5
   h. 13
   i. 2
   j. 12
   k. 15
   l. 6
   m. 8
   n. 14
   o. 9

2. Description should include:
   a. Emotional changes
      1) Need for rest and sleep is great in the immediate postpartum period
      2) The mother is passive and dependent the first two or three days, but then becomes more independent
      3) Following delivery it is not unusual for mood changes to occur frequently with little apparent cause for exhilaration or depression
      4) She may feel inadequate and unsure of her ability to cope with her new role
      5) Some mothers experience depression or postpartum "blues" in varying degrees which may be due in part to physical changes accompanying pregnancy and childbirth
   b. Cervix
      1) It is soft, flabby, and partly open
      2) Muscle begins to regenerate and close os after one week
      3) Small lacerations may heal spontaneously or require cauterization later
      4) External os remains somewhat wider than in nullipara
   c. Gastrointestinal system
      1) Appetite for food and fluid is usually good
      2) Bowel function may be delayed due to
         a) Decreased intake during labor
         b) Flaccid abdominal muscles

        c) Decreased pressure from uterus

        d) Fear of pain from episiotomy or hemorrhoids

    3) Increased caloric and fluid intake is essential for the nursing mother

    4) Limiting fluid intake probably does not decrease lactation in the mother who is not nursing

d. Breasts

    1) Colostrum is secreted the first two or three days; then secretion of milk begins and breasts become engorged

    2) Estrogen and progesterone secreted by the placenta during pregnancy inhibit production of prolactin or lactogenic hormone

    3) Breasts may become swollen, hard, red, and painful

    4) Incomplete emptying of breast decreases milk secretion

e. Circulatory system

    1) Blood loss during delivery decreases blood volume

    2) Moderate anemia may occur due to blood loss

    3) White cell count increases during labor and early puerperium

    4) Fibrinogen level is elevated

    5) Pulse rate slows after delivery

    6) Diaphoresis may occur for several weeks

f. Perineal area

    1) Vagina recovers slowly, but muscle tone never returns to the preparous state

    2) Labia lose their cushion of fat and may become flabby

    3) Perineal tone returns slowly over a six to eight week period

g. Uterus

    1) Uterus gradually becomes smaller during the period of involution and descends into the pelvic cavity; by the tenth postpartum day it should not be palpable above the symphysis pubis

2) Lining sloughs off and is discharged as lochia

a) Lochia rubra--Reddish discharge first four days

b) Lochia serosa--Brownish discharge fourth to tenth day

c) Lochia alba--Yellowish or white discharge after tenth day

3) Persistent reddish color after fourth or fifth day indicates that involution is not taking place or that placental fragments have been retained

h. Abdomen

1) Muscles remain soft and flabby for some time

2) Striae gradually fade to silvery white but do not disappear

3) Separation of abdominal muscles may occur due to loss of muscle tone

4) Multipara may experience afterpains for three to four days

i. Hormonal function

1) Non-nursing mother

a) Ovulation occurs in three to six weeks

b) Menstruation resumes in five to eight weeks

2) Nursing mother

a) Return of menstrual cycle varies; may not occur until after weaning

b) Breast-feeding is not a reliable form of contraception due to variations of hormone production

j. Urinary tract

1) Bladder has increased capacity and the urge to empty it may be diminished due to stretching or anesthesia and analgesics

2) Bladder may fail to empty completely, which increases the incidence of bladder infections

3) Urine output is greatly increased the first 24 to 48 hours as the body excretes fluid retained during pregnancy

3. Discussion should include:

   a. Purposes of daily care

      1) Note and treat any complications

      2) Observe rate of involution

      3) Provide for comfort, cleanliness, rest, and quiet

      4) Prevent infection and thrombophlebitis

      5) Instruct patient in care of herself and the infant using terminology she can understand

   b. Emotional support

      1) Provide for needed rest

      2) Provide privacy for patient and her husband; his emotional and physical support is essential

      3) Assist as needed in her personal care

      4) Reassure and instruct the mother in the care of the infant

      5) Provide opportunity for her to express fears or doubts, to request assistance, or to ask questions

   c. Breasts

      1) Cleanse breasts before bathing the rest of the body

      2) Wash breasts in a circular motion beginning at the nipple and moving outward

      3) Support breasts with a binder or brassiere if nursing

      4) Assist as needed to be sure the baby sucks well and empties the breast

      5) Pump breasts as needed to empty them

   d. Nutrition

      1) Good nutrition promotes recovery, aids in resisting infection, and improves the quality and quantity of milk

      2) An additional intake of approximately 1000 calories will be needed by the nursing mother

3) Fluid intake of 2500 to 3000 cc is essential for the nursing mother; adequate fluid intake in the non-nursing mother aids adequate urination and defecation

4) Between-meal snacks are beneficial and may be needed to provide necessary food and fluid intake

e. Fundus and lochia

1) Palpate fundus daily to determine the height

a) The first day after delivery it is at the level of the umbilicus

b) By the tenth day the fundus has descended into the pelvis and can no longer be palpated

2) Massage fundus gently as needed to keep it firm; do not massage fundus if it is already firm

3) Report immediately if massage fails to firm fundus

4) Note color, amount, and character of lochia

a) Clots are abnormal and should be reported as well as persistent lochia rubra after fourth day

b) Less discharge may occur in primiparas, nursing mothers, physically active multiparas, and those delivered by cesarean section

c) Lochia may increase when patient changes position; reassure her that this is normal and expected

5) Instruct patient to notify the physician if lochia rubra persists after dismissal from hospital or reoccurs after lochia alba

f. Perineal area

1) Perineal care is performed by the nurse until the patient is able to do so

2) Washing with warm water reduces the chances of infection and eases perineal discomfort

3) Perineal care should be provided each time the patient voids or defecates

4) Patients with an indwelling catheter should have perineal care every three hours to prevent growth of bacteria

- 5) Aseptic technique is used in perineal care; instruct patient in proper use of cleansing materials
  - a) Wash hands before care
  - b) Remove perineal pad from front to back
  - c) Use each tissue for one cleansing stroke, always wiping from front to back
  - d) Use the equipment provided for her; do not loan to or borrow from other patients
  - e) Avoid touching the side of the perineal pad that goes next to the perineum
  - f) Wash hands and replace equipment after securing the pad
- 6) Administer heat, cold, analgesic spray, or ointment as prescribed
- 7) Observe perineum and sutures for signs of infection or hematoma

4. a. Thrombophlebitis

- 1) Causes
  - a) Venous stasis
  - b) Clotting defects
  - c) Excess fibrinogen
- 2) Symptoms
  - a) Chills and fever
  - b) Pain in leg
  - c) Leg feels hot to touch
  - d) Swelling in one leg
  - e) Red streaks or local inflammation
- 3) Treatment
  - a) Anticoagulants
  - b) Prothrombin and clotting times
  - c) Applications of heat or cold

            - d) Bed rest
            - e) Cautious ambulation
            - f) Elastic bandages to legs
        - 4) Nursing implications
            - a) Decrease incidence with early ambulation
            - b) Observe carefully for abnormal lochia
            - c) Elevate affected leg, being careful to support entire leg
            - d) Support bedcovers with a cradle
            - e) Avoid any rubbing or massage of affected leg
            - f) Maintain bed rest or ambulation as prescribed
            - g) Assist with position changes and deep breathing to avoid further complications
            - h) Provide encouragement and reassurance
            - i) Instruct patient to
                - 1) Avoid remaining in one position too long
                - 2) Avoid crossing legs when sitting or lying
                - 3) Wear elastic stockings as prescribed
    - b. Hemorrhage
        - 1) Causes
            - a) Uterine atony
            - b) Vaginal and cervical lacerations
            - c) Retention of placenta fragments
            - d) Clotting defects of the blood
            - e) Multiple births
            - f) Multiparity
        - 2) Symptoms
            - a) Bleeding in excess of 500 cc
            - b) Rapid and/or thready pulse

- c) Decrease in blood pressure
- d) Pallor
- e) Chilliness
- f) Dyspnea and air hunger
- g) Restlessness
- h) Disturbed vision
- i) Unconsciousness

3) Treatment

- a) Massage fundus until firm
- b) Administer oxytocic and/or vitamin K
- c) Repair lacerations when present
- d) Fluid and blood replacement as indicated
- e) Surgery as necessary
  - (1) D and C
  - (2) Hysterectomy

4) Nursing implications

- a) Observe closely to aid in preventing hemorrhage
- b) Use correct technique in massaging fundus
- c) Observe amount and characteristics of lochia
- d) Administer prescribed medications
- e) Check vital signs
- f) Observe food and fluid intake
- g) Maintain aseptic technique
- h) Assist with careful and progressive activity

c. Puerperal infection

1) Causes

a) Introduction of pathogenic organisms into the genital tract through poor technique, improperly sterilized equipment, and careless rectal or vaginal examinations

b) Care by persons with an upper respiratory infection or harboring streptococci or staphylococci organisms in nasopharynx

c) Contact with another infected patient

d) Local lesion of perineum, vagina, cervix, or endometrium

2) Symptoms

a) Changes in lochia--Foul smelling, profuse or scanty amount

b) Continuous temperature over 100.4°F (38°C) for two days or more

c) Chilling

d) Rapid pulse and respiration

e) Uterus large and tender

f) Severe and prolonged afterbirth pains

g) Headache

h) Insomnia

i) Anorexia

3) Treatment

a) Isolation as needed

b) Fowler's position to promote drainage

c) Oxytocics

d) Antibiotics

e) Supportive therapy

4) Nursing implications

a) Maintain aseptic techniques

b) Observe for drainage

c) Carry out isolation technique if prescribed

d) Administer prescribed medications

e) Report frequently on infant's condition if mother is isolated

f) Provide encouragement and support

5. Discussion should include:

a. Remember that a mother coping with a handicapped infant or the loss of an infant by death or adoption requires a great deal of emotional support and understanding

b. Provide time and place for the bereaved patient to be with her husband, family, and friends

c. Transfer patient to another area of the hospital when indicated

d. Encourage patient to express her feelings freely by listening

e. Provide information concerning the infant; evading questions or lying to the patient concerning the infant is inexcusable

f. Do not avoid the patient and/or family because of their grief

6. a. Symptoms

1) Insomnia

2) Confusion

3) Irritability

4) Apathy and depression

5) Delusions and hallucinations

6) Delirium

7) Any unusual behavior

b. Nursing implications

1) Reduce stress of labor and delivery for all mothers

a) Instruct adequately and explain all procedures

b) Provide reassurance and emotional support

2) Provide necessary instruction to aid in assuming a new role

        3) Assist in early detection of symptoms which indicate difficulty in adapting to new role

        4) Prevent injury to mothers, their infants, or other patients through careful observation and nursing care of mothers who behave in unusual manner

        5) Report any unusual behavior to the physician immediately

7. Any six of the following:

    a. Condom

    b. Coitus interruptus

    c. Spermicidal preparations

    d. Diaphragm

    e. Intrauterine device; IUD

    f. Oral

    g. Rhythm

    h. Silastic implant

    i. Douche

    j. Tubal ligation

    k. Vasectomy

8. Discussion should include:

    a. Advantages

        1) Provides mother and infant with a natural mother-child relationship as soon as the mother is ready

        2) Affords opportunity for on-demand feeding

        3) Facilitates instruction of mothers and fathers in infant care

        4) Strengthens parent-child relationship

        5) Reduces incidence of cross-infection among infants

b. Disadvantages

  1) May be impractical or impossible to ‹ mother is experiencing problems

    a) Recovery from difficult labor or delivery

    b) Recovery from general anesthesia

    c) Complications in puerperium

    d) Marital discord

    e) Disappointment in sex of child

  2) May be difficult or impossible in cases of neonate distress

    a) Conditions requiring special attention

    b) Prematurity

    c) Defects or abnormalities

9. Discussion should include:

a. Advantages

  1) Requires little preparation; more convenient

  2) Is more easily digested

  3) May increase infant's resistance to respiratory and gastrointestinal infection

  4) Provides milk free from harmful bacteria

  5) Causes fewer allergy reactions

  6) Stimulates secretion of oxytocic hormone in the mother

  7) Provides pleasure for mother and infant

b. Disadvantages

  1) May be too confining for the mother

  2) Transmits certain drugs through the milk

  3) Contraindicated in some communicable diseases such as syphilis, tuberculosis, or other highly contagious diseases

  4) May be distressful to some mothers

  5) May provide insufficient amount of milk

10. Description should include:

    a. Instruct mother to wash her hands each time she handles the baby and particularly before each feeding

    b. Provide for mother's comfort

        1) In first few postpartum days she may prefer to lie down because of perineal tenderness; assist her to a side-lying position with one arm raised and head supported on one pillow

        2) She may prefer to sit in a chair with her feet on a footstool and with the baby supported on a pillow

    c. Provide for baby's first feeding within eighteen hours after birth

    d. Instruct mother that infants have a *rooting reflex*, an instinctive movement to turn toward anything warm which touches lips or cheeks

    e. Make sure infant holds all or most of the areola in his/her mouth in order to suckle properly

    f. Do not give breast-fed babies formula or glucose in water between breast-feedings unless prescribed

    g. Allow breast-fed infants to determine their own feeding schedules when possible

    h. Have the mother empty breast as often as eight to ten times per day at first to establish an adequate supply of milk

    i. Allow the infant to nurse on both breasts to stimulate production and to prevent nipple soreness for the first few feedings

    j. Have the mother manually express a small amount of excess milk each time before nursing the infant if the breasts are quite full

    k. Encourage the mother to maintain adequate food and fluid intake to be able to produce sufficient milk

    l. Discourage supplementary feedings

        1) Suckling more often usually increases the supply

        2) Regular stimulation of the breasts is necessary to increase or maintain lactation

11. Performance skills will be evaluated to the satisfaction of the instructor.

CARE OF THE NORMAL NEWBORN
UNIT VI

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to describe the normal neonate and behavior, body systems, and daily care. This knowledge will be evidenced by demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with the normal newborn to the correct definitions.
2. List infant mortality rates for the years 1900 and 1972.
3. Describe the size of the average newborn.
4. Describe the appearance of the normal neonate.
5. Discuss the behavior of the normal neonate.
6. Describe the body systems of the newborn.
7. Discuss the daily care of the neonate.
8. Discuss techniques of formula feeding.
9. Discuss circumcision care.
10. Demonstrate the ability to admit neonate to the nursery.

CARE OF THE NORMAL NEWBORN
UNIT VI

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information and job sheets.

  C. Refer to Transparency 4, Fetal Skull, in Unit III, "Care of the Patient in Labor and Delivery."

  D. Discuss terminal and specific objectives.

  E. Discuss information sheet.

  F. Demonstrate and discuss procedures outlined on the job sheets.

  G. Discuss procedures for care of neonates in the facility.

  H. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Demonstrate the ability to accomplish procedures outlined on the job sheets.

  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objective sheet

  B. Information sheet

  C. Transparency master: TM 1--Holding the Infant

  D. Job Sheet #1--Admit Neonate to Nursery

E. Test

F. Answers to test

II. References:

A. Bleier, Inge J. *Maternity Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1971.

B. Broadribb, Violet, and Charlotte Corliss. *Maternal-Child Nursing.* Philadelphia, Pennsylvania. J. B. Lippincott Company, 1973.

C. Friesner, Arlyne, and Beverly Raff. *Obstetric Nursing.* Flushing, New York: Medical Examination Publishing Company, Inc., 1974.

D. Ingalls, A. Joy, and M. Constance Salerno. *Maternal and Child Health Nursing.* St. Louis, Missouri: The C. V. Mosby Company, 1971.

E. Lerch, Constance. *Maternity Nursing.* St. Louis, Missouri: The C. V. Mosby Company, 1974.

F. Ribble, Margaret. *The Rights of Infants.* New York: The New American Library.

G. Thompson, Ella M., and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

III. Other materials:

A. Films

1. "Baths and Babies." Johnson and Johnson.

2. "Cleared for Hearing." United States Public Health Service.

3. "Neurological Examination of the Newborn." American Medical Association Film Library c/o Association-Sterling Films.

4. "The New Baby." Contemporary/McGraw Hill, 1221 Avenue of the Americas, New York, New York 10020.

(NOTE: The above films are available to Oklahoma instructors from the Oklahoma State Department of Health.)

5. "Newborn." Johnson and Johnson.

6. "First Two Weeks of Life." Association-Sterling Films.

B. Filmstrips

1. "Characteristics of the Normal Neonate." Medical Electronic Educational Services.

2. "Physiology of the Newborn." Medical Electronic Educational Services.

3. "Introduction to Infant Care." Trainex Corporation.
4. "Bottle Feeding." Trainex Corporation.
5. "Skin Care and Bathing Preparation." Trainex Corporation.
6. "Bathing the Baby." Trainex Corporation.
7. "Health Care of the Normal Infant." Trainex Corporation.

C. Charts

1. "How a Baby Grows." Johnson and Johnson.
2. "How to Bathe a Baby." Johnson and Johnson.
3. "Infant Stool Cycle." Clinical Education Aid no. 3, Ross Laboratories.
4. "Common Variations of the Neonate." Clinical Education Aid no. 8, Ross Laboratories.

CARE OF THE NORMAL NEWBORN
UNIT VI

INFORMATION SHEET

I. Terms and definitions

- A. Neonate--Newborn infant up to four weeks of age
- B. Hydrocephaly--Abnormal condition caused by an increase in the volume of cerebrospinal fluid within the skull
- C. Microcephaly--Abnormal smallness of the head
- D. Fontanel--Membranous space between the cranial bones in fetal life and infancy
- E. Anterior fontanel--Opening at the point of union of the frontal, sagittal, and coronal sutures
- F. Posterior fontanel--Opening at the point of union of the lambdoid and sagittal sutures
- G. Intracranial--Within the cranium or skull
- H. Milia--Minute epidermal cysts (singular--milium)
- I. Hyperbilirubinemia--Excessive amount of bilirubin in the blood; severe and prolonged physiologic jaundice sometimes seen in the premature infant
- J. Regurgitation--Return of food from the stomach to the mouth without vomiting
- K. Mongolian spot--Focal bluish gray discoloration of the skin on the lower back which is present at birth and gradually fades

II. Infant mortality rates

- A. 1900--200 per 1,000 births
- B. 1972--18.5 per 1,000 births
- C. 70% of infant deaths occur in the first 28 days, the neonatal period

(NOTE: One out of every 54 babies born dies before the first birthday.)

INFORMATION SHEET

III. Size of the average newborn

- A. Length--19 to 21 1/2 inches (48 to 54.5 cm)
- B. Weight
  1. Six to eight and one-half pounds or 2700 to 3850 grams is average (2.7 to 3.85 kg)
  2. Boys usually weigh more than girls
  3. Weight under five pounds or 2500 grams (2.5 kg) usually classified as premature
  4. Weight loss of 6 to 10 ounces (186 to 310 gm) during first few days after birth due to
     - a. Withdrawal of maternal hormones
     - b. Loss of fluid
     - c. Loss of meconium and urine
     - d. Limited intake
- C. Measurements
  1. Head--Large in proportion to the rest of the body
     - a. Normal circumference 13.2 to 14.8 inches (33.5 to 37.5 cm)
     - b. Over 14.8 (37.5 cm) may be hydrocephalic
     - c. Under 13.2 (33.5 cm) may be premature or microcephalic
  2. Fontanels
     - a. Anterior fontanel closes between 12 and 18 months
     - b. Posterior fontanel is smaller than anterior and closes by end of second month
     - c. Both bulge when baby cries or strains or when intracranial pressure is increased
     - d. Depression may be due to dehydration

INFORMATION SHEET

3. Chest
    a. Same as abdomen at birth
    b. At two years should exceed circumference of head

IV. Appearance of the normal neonate

A. Color
    1. Ranges from pink to bright pink
    2. May appear splotchy due to sluggish circulation
    3. Becomes red when crying

B. Tissue turgor--Good

C. Lanugo--Most noticeable on shoulders and back

D. Vernix caseosa--Varies from very little to complete, thick covering

E. Marks and blemishes
    1. Bruises--May occur on head or scalp in cephalic presentations, on buttocks or genitalia in breech presentations
    2. Forceps marks
    3. Milia
    4. Congenital skin blemishes or birthmarks
        a. May appear as reddened areas on the skin
        b. May or may not be elevated
        c. Are more noticeable during crying
        d. May blanch on palpation
        e. May disappear spontaneously

(NOTE: There are several types of birthmarks. Telangiectasia or "stork bites" usually disappear during infancy. The more pronounced hemangiomas or "strawberry marks" or "port wine stains" may be disfiguring and difficult to treat.)

INFORMATION SHEET

    5. Mongolian spots

V. Behavior of the normal neonate

  A. Activity

    1. Cries lustily
    2. Kicks or moves vigorously
    3. Sucks often, even when not eating
    4. Lies in fetal position

  B. Sensory system

    1. Heat-regulating mechanism unstable for first 7 to 10 days
    2. Vision limited to seeing lights and bright objects
    3. Hearing acute; infant is startled by loud noises
    4. Nervous system complete but not well developed

  C. Reflex behavior

    1. Sucking and swallowing--Essential for nourishment
    2. Rooting--Indication of alertness
    3. Cough or gag reflex--Prevents choking
    4. Grasp--Indication of strength and alertness
    5. Moro--Absence may indicate brain damage

       (NOTE: Moro reflex occurs when the baby is startled, usually by a sudden jarring of the bed or table on which he/she is lying. The infant responds by throwing arms out to the side and drawing up legs.)

    6. Tonic neck--Position assumed by most neonates

       (NOTE: The infant turns the head to one side, extends the arm on the same side, and flexes the other arm in a fencing position.)

INFORMATION SHEET

VI. Body systems

A. Respiratory

(NOTE: Sucking in or retraction of the chest wall in the rib or sternal area on inspiration is an indication of respiratory distress.)

1. Breathing is quiet and shallow using mainly the diaphragm and abdominal muscles
2. Rate is 30 to 80 per minute
3. Character and rhythm vary with activity

B. Cardiovascular

1. Heart rate is 120 to 180 per minute; apical pulse is more accurate than radial
2. Blood does not circulate freely to the extremities; so the feet and hands may be blue or feel cool
3. Blood pressure is usually below 100 and is difficult to obtain
4. Prothrombin level is low
5. Surplus red blood cells are destroyed and result in hyperbilirubinemia which temporarily tints the skin; this is called *physiological jaundice*

   (NOTE: Physiological jaundice usually occurs during the third to seventh day after birth.)

6. During the last few months of fetal life, the infant has stored enough iron to meet own needs for the first few months after birth

C. Temperature

1. Temperature regulation is unstable
2. Temperature drops rapidly after birth to approximately 96°
3. During the first twelve hours it gradually rises to 98° or 99° and stabilizes

INFORMATION SHEET

4. Neonates can be assisted in temperature stabilization by placing them in an incubator or by being covered lightly in a warm room

5. Overheating should be avoided since the neonate does not perspire effectively

D. Gastrointestinal

1. Meconium should be passed within the first twenty-four hours; if no stool is passed, malformation of the digestive tract is suspected

2. Transitional stools, passed after the infant receives milk, are first brown and then yellow green

3. Stools of formula-fed babies are lemon yellow and have the appearance of curds

4. Stools of breast-fed babies are orange yellow and are usually softer and more frequent

5. Neonate is capable of digesting proteins, fats, and carbohydrates in mother's milk or formulas

E. Urinary

1. Infant has ample fluid in the tissues and usually does well without fluids the first few hours

2. First voiding may not occur for twenty-four hours although there is usually urine in the bladder at birth

3. Urine of the neonate contains relatively large amounts of uric acid which may crystallize out of voided urine causing a brick red stain on the diaper

4. Kidneys are limited in their ability to respond to an abnormal fluid balance; therefore, edema or dehydration may occur rapidly

F. Endocrine

1. Maternal hormones cross the placental barrier and may cause

   a. Swelling of the breasts in either sex

   b. Breast secretion in either sex

INFORMATION SHEET

        c. Infantile menstruation in female
        d. White mucoid vaginal discharge
    2. Genitalia of both the male and female may be swollen; breech infants may have discoloration as well
    3. Foreskin may adhere to the glans penis

VII. Daily care of the neonate

A. Protection

1. Maintain aseptic technique
2. Use separate equipment for each infant
3. Never leave an infant unattended on a flat surface

B. Observation

1. Color
2. Cry
3. Respiration
4. Temperature to touch
5. Elimination, both urine and stool
6. Sleeping
7. Activity level
8. Weight
9. Feeding behavior and patterns
10. Signs of infant distress
    a. Increased respiratory rate or difficulty
    b. Excessive mucus or drooling
11. Vomiting
12. Condition of cord
13. Skin for jaundice, rash, blemishes, or marks

INFORMATION SHEET

C. Physical care

  1. Bath
  2. Clothing change
  3. Temperature by thermometer
  4. Cleansing of cord; removal of cord clamp after twenty-four hours
  5. Care of circumcision when present
  6. Diaper changes as needed with cleansing
  7. Breast or formula feeding
  8. Test for PKU

D. Emotional care

  1. Handle infants gently but firmly, always providing support for the head and neck
  2. Avoid sudden movements and loud noises
  3. Provide a sense of security and safety in carrying the infant
     a. Traditional cradle hold (Transparency 1)
        1) Child's head is cradled in the elbow
        2) Forearm reaches around the outside of the infant's body to grasp the outer leg
        3) Nurse's other hand is used to support back and buttocks or provide needed care
     b. Football hold (Transparency 1)
        1) Length of baby's body is supported by the forearm with the infant's head and neck resting on the nurse's hand
        2) Lower portion of infant's body, legs, and buttocks are held firmly between nurse's elbow and hip
        3) Nurse's other hand is free to provide care

INFORMATION SHEET

c. Shoulder hold (Transparency 1)

1) Infant is held upright against the chest and shoulder with one hand or forearm supporting the infant's buttocks

2) Other hand supports the infant's back and buttocks

3) Both hands are needed to support the baby properly

4. Provide tactile stimulation

5. Talk to infant

VIII. Techniques of formula feeding

A. Aseptic technique should be maintained

B. Formula is usually fed at room temperature

C. Rate of flow from the nipple should be almost one drop per second

1. Nipple holes may be enlarged with a hot needle

2. Weak or easily fatigued infants will require larger nipple holes and/or softer nipples

3. Vigorously sucking babies should be given a resistant nipple

D. Nipple must be on top of the tongue and not back far enough to stimulate the gag reflex

E. Infant's head and upper body should be slightly elevated; this position minimizes the possibility of aspiration and the flow of liquid into the eustachian canal

F. The bottle should be tipped so there is always fluid in the nipple and neck to lessen air swallowing

G. Air swallowed by the infant may be expelled by gently rubbing the back while holding in an upright position against the shoulder or in a sitting position on the lap

H. Neonate should be observed closely during and between feedings for signs of respiratory or gastrointestinal distress

I. Regurgitation of a feeding through the nose and mouth should be reported; clear airway and observe infant closely

INFORMATION SHEET

J. The infant should be cleaned as required after feeding and placed on right side or abdomen in the crib

IX. Circumcision care

A. Most male infants are circumcised

B. Hebrew male infants are nearly always circumcised on the eighth day of life

C. Each physician has own preferences regarding the procedure

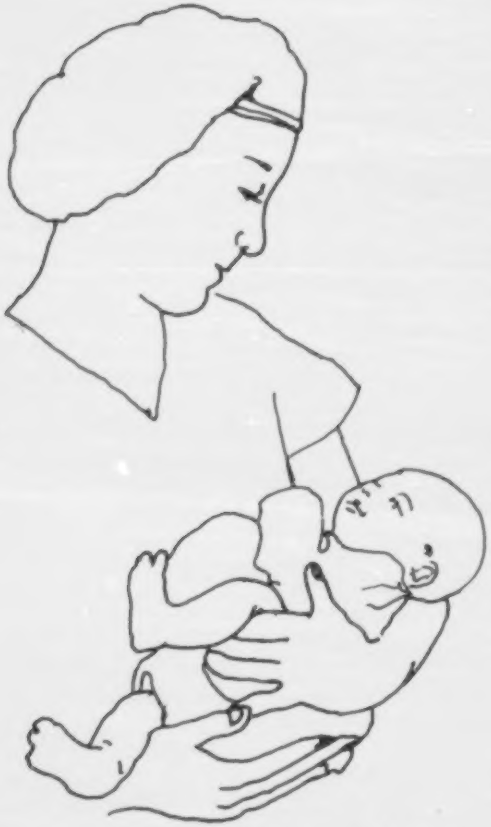
D. The infant should be observed frequently for

1. Bleeding
2. Swelling of the incision or penis
3. Urinary retention

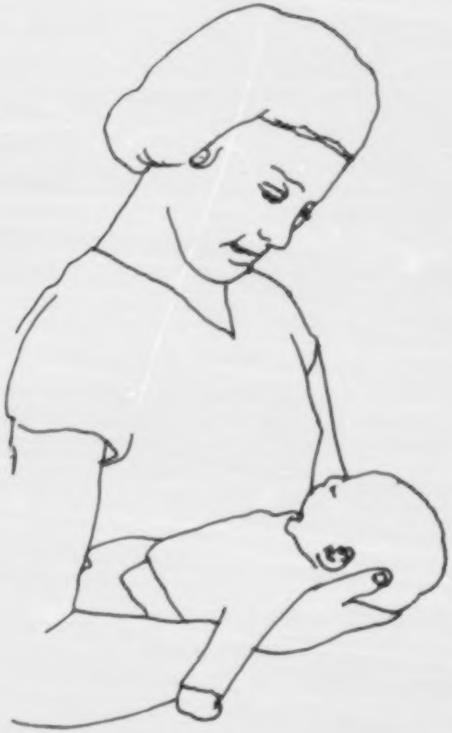
E. Area should be kept clean and dressings changed as necessary

F. The infant should be placed on side rather than on abdomen

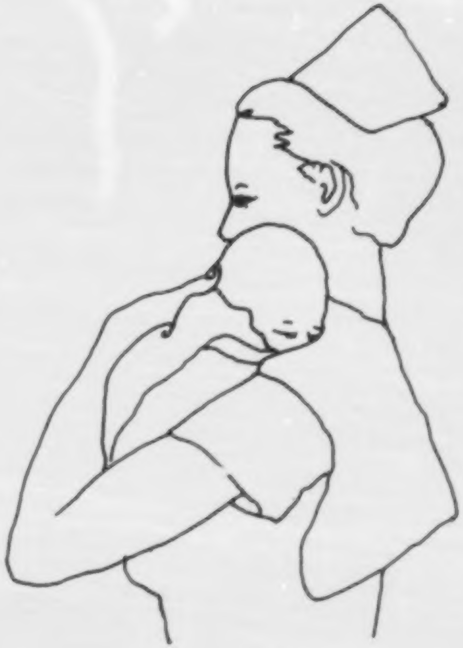
Holding the Infant



Traditional Cradle Hold



Football Hold



Shoulder Hold

CARE OF THE NORMAL NEWBORN
UNIT VI

JOB SHEET #1--ADMIT NEONATE TO NURSERY

I. Equipment

- A. Basin of warm water
- B. Mild soap or antibacterial solution
- C. Washcloth
- D. Two towels or other soft cloths for covering and drying
- E. Aspiration bulb
- F. Sterile cotton balls
- G. Antiseptic solution
- H. Sterile applicators
- I. Thermometer
- J. Clothing

II. Procedure

- A. Wash hands
- B. Check infant identification, weight, and measurements
- C. Take temperature
- D. Wash hands
- E. Cleanse eyes if necessary
    1. Moisten cotton ball with sterile water
    2. Wipe eye from inner canthus to outside; discard cotton ball
    3. Wipe second eye in same manner
- F. Wash face if needed, using water but no soap
- G. Check nostrils; clean with water-moistened cotton twists as needed

JOB SHEET #1

H. Cleanse external ears as necessary with cotton balls

I. Wash head gently with soap and water, rinse and pat dry

(NOTE: A football hold for the baby is best for this procedure.)

J. Continue bath by washing, rinsing, and drying the neck, chest, arms, hands, abdomen, and back

(NOTE: Some physicians prefer that not all the vernix be removed but all traces of blood or meconium should be.)

K. Put garment on, turning it up to be out of the way as the bath is completed

L. Wash legs, feet, and then the buttocks and perineal region

M. Wash hands

N. Apply antiseptic to cord end and the skin surrounding the base of the cord using sterile applicators

O. Inspect and cleanse genitalia

1. On female infant cleanse from front to back between labia, using one cotton ball for each stroke

2. On male infant retract foreskin gently unless contraindicated and clean the glans, replace foreskin immediately

P. Put diaper on

Q. Place infant in prepared crib or incubator

R. Check identification band with identification card on crib

S. Place infant on side, propping as necessary to maintain position

Do not place infant on his/her back

U. Cover lightly as needed

V. Record all pertinent observations

1. Temperature

2. Voiding

JOB SHEET #1

3. Stool
4. Color
5. Cry
6. Respirations

(NOTE: This same procedure is followed for daily care.)

CARE OF THE NORMAL NEWBORN
UNIT VI

TEST

1. Match the terms on the right to the correct definition.

______a. Newborn infant up to four weeks of age

______b. Membranous space between the cranial bones in fetal life and infancy

______c. Abnormal smallness of the head

______d. Within the cranium or skull

______e. Abnormal condition caused by an increase in the volume of cerebrospinal fluid within the skull

______f. Minute epidermal cysts

______g. Opening at the point of union of the lambdoid and sagittal sutures

______h. Return of food from the stomach to the mouth without vomiting

______i. Opening at the point of union of the frontal, sagittal, and coronal sutures

______j. Excessive amount of bilirubin in the blood; severe and prolonged physiologic jaundice sometimes seen in the premature infant

______k. Focal bluish gray discoloration of the skin on the lower back which is present at birth and gradually fades

1. Hydrocephaly
2. Posterior fontanel
3. Hyperbilirubinemia
4. Mongolian spot
5. Anterior fontanel
6. Microcephaly
7. Milia
8. Fontanel
9. Intracranial
10. Regurgitation
11. Neonate

2. Write the infant mortality rates in the blanks provided.

a. 1972-- ______ per 1,000 births

b. ______% of infant deaths occur in the first ______ days, the neonatal period

c. 1900-- ______ per 1,000 births

3. Describe the size of the average newborn.

4. Describe the appearance of the normal neonate.

5. Discuss the behavior of the normal neonate.

6. Describe the body systems of the newborn.

   a. Respiratory

   b. Cardiovascular

c. Temperature

d. Gastrointestinal

e. Urinary

f. Endocrine

7. Discuss the daily care of the neonate.

8. Discuss techniques of formula feeding.

9. Discuss circumcision care.

10. Demonstrate the ability to admit neonate to the nursery.

(NOTE: If this has not been accomplished prior to the test, ask the instructor when the above activity should be completed.)

CARE OF THE NORMAL NEWBORN
UNIT VI

ANSWERS TO TEST

1.
   a. 11
   b. 8
   c. 6
   d. 9
   e. 1
   f. 7
   g. 2
   h. 10
   i. 5
   j. 3
   k. 4

2.
   a. 18.5
   b. 70, 28
   c. 200

3. Description should include:
   a. Length--19 to 21 1/2 inches (48 to 54.5 cm)
   b. Weight
      1) Six to eight and one-half pounds or 2700 to 3850 grams is average (2.7 to 3.85 kg)
      2) Boys usually weigh more than girls
      3) Weight under five pounds or 2500 grams (2.5 kg) usually classified as premature
      4) Weight loss of 6 to 10 ounces (186 to 310 gm) during first few days after birth due to
         a) Withdrawal of maternal hormones
         b) Loss of fluid
         c) Loss of meconium and urine
         d) Limited intake
   c. Measurements
      1) Head--Large in proportion to the rest of the body
         a) Normal circumference 13.2 to 14.8 inches (33.5 to 37.5 cm)

        - b) Over 14.8 (37.5 cm) may be hydrocephalic
        - c) Under 13.2 (33.5 cm) may be premature or microcephalic
    - 2) Fontanels
        - a) Anterior fontanel closes between 12 and 18 months
        - b) Posterior fontanel is smaller than anterior and closes by end of second month
        - c) Both bulge when baby cries or strains or when intracranial pressure is increased
        - d) Depression may be due to dehydration
    - 3) Chest
        - a) Same as abdomen at birth
        - b) At two years should exceed circumference of head

4. Description should include:
    - a. Color
        - 1) Ranges from pink to bright pink
        - 2) May appear splotchy due to sluggish circulation
        - 3) Becomes red when crying
    - b. Tissue turgor--Good
    - c. Lanugo--Most noticeable on shoulders and back
    - d. Vernix caseosa--Varies from very little to complete, thick covering
    - e. Marks and blemishes
        - 1) Bruises--May occur on head or scalp in cephalic presentations, on buttocks or genitalia in breech presentations
        - 2) Forceps marks
        - 3) Milia
        - 4) Congenital skin blemishes or birthmarks
            - a) May appear as reddened areas on the skin
            - b) May or may not be elevated

            c) Are more noticeable during crying
            d) May blanch on palpation
            e) May disappear spontaneously
        5) Mongolian spots

5. Discussion should include:
    a. Activity
        1) Cries lustily
        2) Kicks or moves vigorously
        3) Sucks often, even when not eating
        4) Lies in fetal position
    b. Sensory system
        1) Heat-regulating mechanism unstable for first 7 to 10 days
        2) Vision limited to seeing lights or bright objects
        3) Hearing acute; infant is startled by loud noises
        4) Nervous system complete but not well developed
    c. Reflex behavior
        1) Sucking and swallowing--Essential for nourishment
        2) Rooting--Indication of alertness
        3) Cough or gag reflex--Prevents choking
        4) Grasp--Indication of strength and alertness
        5) Moro--Absence may indicate brain damage
        6) Tonic neck--Position assumed by most neonates

6. Description should include:
    a. Respiratory
        1) Breathing is quiet and shallow using mainly the diaphragm and abdominal muscles
        2) Rate is 30 to 80 per minute
        3) Character and rhythm vary with activity

b. Cardiovascular

1) Heart rate is 120 to 180 per minute; apical pulse is more accurate than radial

2) Blood does not circulate freely to the extremities; so the feet and hands may be blue or feel cool

3) Blood pressure is usually below 100 and is difficult to obtain

4) Prothrombin level is low

5) Surplus red blood cells are destroyed and result in hyperbilirubinemia which temporarily tints the skin; this is called *physiological jaundice*

6) During the last few months of fetal life, the infant has stored enough iron to meet own needs for the first few months after birth

c. Temperature

1) Temperature regulation is unstable

2) Temperature drops rapidly after birth to approximately 96°

3) During the first twelve hours it gradually rises to 98° or 99° and stabilizes

4) Neonates can be assisted in temperature stabilization by placing them in an incubator or by being covered lightly in a warm room

5) Overheating should be avoided since the neonate does not perspire effectively

d. Gastrointestinal

1) Meconium should be passed within the first twenty-four hours; if no stool is passed, malformation of the digestive tract is suspected

2) Transitional stools, passed after the infant receives milk, are first brown and then yellow green

3) Stools of formula-fed babies are lemon yellow and have the appearance of curds

4) Stools of breast-fed babies are orange yellow and are usually softer and more frequent

5) Neonate is capable of digesting proteins, fats, and carbohydrates in mother's milk or formulas

e. Urinary

  1) Infant has ample fluid in the tissues and usually does well without fluids the first few hours

  2) First voiding may not occur for twenty-four hours although there is usually urine in the bladder at birth

  3) Urine of the neonate contains relatively large amounts of uric acid which may crystallize out of voided urine causing a brick red stain on the diaper

  4) Kidneys are limited in their ability to respond to an abnormal fluid balance; therefore, edema or dehydration may occur rapidly

f. Endocrine

  1) Maternal hormones cross the placental barrier and may cause

    a) Swelling of the breasts in either sex

    b) Breast secretion in either sex

    c) Infantile menstruation in female

    d) White mucoid vaginal discharge

  2) Genitalia of both the male and female may be swollen; breech infants may have discoloration as well

  3) Foreskin may adhere to the glans penis

7. Discussion should include:

a. Protection

  1) Maintain aseptic technique

  2) Use separate equipment for each infant

  3) Never leave an infant unattended on a flat surface

b. Observation

  1) Color

  2) Cry

  3) Respiration

  4) Temperature to touch

5) Elimination, both urine and stool

6) Sleeping

7) Activity level

8) Weight

9) Feeding behavior and patterns

10) Signs of infant distress

    a) Increased respiratory rate or difficulty

    b) Excessive mucus or drooling

11) Vomiting

12) Condition of cord

13) Skin for jaundice, rash, blemishes, or marks

c. Physical care

1) Bath

2) Clothing change

3) Temperature by thermometer

4) Cleansing of cord; removal of cord clamp after twenty-four hours

5) Care of circumcision when present

6) Diaper changes as needed with cleansing

7) Breast or formula feeding

8) Test for PKU

d. Emotional care

1) Handle infants gently but firmly, always providing support for the head and neck

2) Avoid sudden movements and loud noises

3) Provide a sense of security and safety in carrying the infant

- a) Traditional cradle hold
  - (1) Child's head is cradled in the elbow
  - (2) Forearm reaches around the outside of the infant's body to grasp the outer leg
  - (3) Nurse's other hand is used to support back and buttocks or provide needed care
- b) Football hold
  - (1) Length of baby's body is supported by the forearm with the infant's head and neck resting on the nurse's hand
  - (2) Lower portion of infant's body, legs, and buttocks are held firmly between nurse's elbow and hip
  - (3) Nurse's other hand is free to provide care
- c) Shoulder hold
  - (1) Infant is held upright against the chest and shoulder with one hand or forearm supporting the infant's buttocks
  - (2) Other hand supports the infant's back and buttocks
  - (3) Both hands are needed to support the baby properly

4) Provide tactile stimulation

5) Talk to infant

8. Discussion should include:
   - a. Aseptic technique should be maintained
   - b. Formula is usually fed at room temperature
   - c. Rate of flow from the nipple should be almost one drop per second
     - 1) Nipple holes may be enlarged with a hot needle
     - 2) Weak or easily fatigued infants will require larger nipple holes and/or softer nipples
     - 3) Vigorously sucking babies should be given a resistant nipple

d. Nipple must be on top of the tongue and not back far enough to stimulate the gag reflex

e. Infant's head and upper body should be slightly elevated; this position minimizes the possibility of aspiration and the flow of liquid into the eustachian canal

f. The bottle should be tipped so there is always fluid in the nipple and neck to lessen air swallowing

g. Air swallowed by the infant may be expelled by gently rubbing the back while holding in an upright position against the shoulder or in a sitting position on the lap

h. Neonate should be observed closely during and between feedings for signs of respiratory or gastrointestinal distress

i. Regurgitation of a feeding through the nose and mouth should be reported; clear airway and observe infant closely

j. The infant should be cleaned as required after feeding and placed on right side or abdomen in the crib

9. Discussion should include:

a. Most male infants are circumcised

b. Hebrew male infants are nearly always circumcised on the eighth day of life

c. Each physician has own preferences regarding the procedure

d. The infant should be observed frequently for

1) Bleeding

2) Swelling of the incision or penis

3) Urinary retention

e. Area should be kept clean and dressings changed as necessary

f. The infant should be placed on side rather than on abdomen

10. Performance skills evaluated to the satisfaction of the instructor.

CARING FOR THE PREMATURE INFANT
UNIT VII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to describe the premature infant and discuss problems of prematurity and nursing responsibilities to alleviate the problems. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with this unit to the correct definitions.
2. Discuss the concept of the premature infant.
3. List common maternal, fetal, and placental conditions which predispose to premature birth.
4. Describe the appearance of the premature infant.
5. Discuss causes, complications, and nursing responsibilities of problems of prematurity: respiratory distress, instability of body temperature, inadequate nutrition, and fatigue.
6. Discuss the emotional support of the parents of a premature infant.

CARING FOR THE PREMATURE INFANT
UNIT VII

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information sheet.

   C. Discuss terminal and specific objectives.

   D. Discuss information sheet.

   E. Discuss the procedures for premature care in the facility.

   F. Observe care of the premature infant in the nursery.

   G. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Test

   D. Answers to test

II. References:

   A. Broadribb, Violet, and Charlotte Corliss. *Maternal-Child Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

B. Friesner, Arlyne, and Beverly Raff. *Obstetric Nursing.* Flushing, New York: Medical Examination Publishing Company, Inc., 1974.

C. Ingalls, A. Joy, and M. Constance Salerno. *Maternal and Child Health Nursing.* St. Louis, Missouri: The C. V. Mosby Company, 1971.

D. Lerch, Constance. *Maternity Nursing.* St. Louis, Missouri: The C. V. Mosby Company, 1974.

E. Myers, Marian S. "Mature or Immature? Assessing Gestational Age." *RN*, January 1975.

III. Other materials:

A. Film--"Neurological Examination of the Newborn Infant." Oklahoma State Department of Health.

B. Charts

1. "The Vital Signs Wheel." Mead Johnson Laboratories.

2. "The Premature Infant." Clinical Education Aids, no. 5. Ross Laboratories.

CARING FOR THE PREMATURE INFANT
UNIT VII

INFORMATION SHEET

I. Terms and definitions

   A. Premature infant--Infant born before the end of the thirty-seventh week of gestation

   B. Anomaly--Any deviation from the usual in form, structure, or location; abnormality or malformation

   C. Herpes simplex--Acute virus infection characterized by groups of vesicles surrounded by reddened skin area

   (NOTE: An example of herpes simplex is a cold sore or fever blister.)

   D. Toxoplasmosis--Type of protozoon infection which may be transmitted from the mother to the fetus in utero or at birth

   E. Gavage--Administration of nourishment through a nasogastric tube

   F. Eruct--Belch

   G. Audio--Pertaining to hearing

   H. Tactile--Pertaining to the sense of touch

   I. Stupor--Condition characterized by marked decrease of response to stimuli

   J. Hyaline membrane disease--Disorder of the alveoli and respiratory passages that causes inadequate expansion of the lungs

II. Concept of premature infant

   A. The premature infant is one who is born earlier, smaller, and physically less mature than the full-term infant

   B. Determination of prematurity depends upon one or more of the following criteria

      1. Birth weight less than 2,500 grams or 5 1/2 pounds

      2. Gestation of less than 37 weeks

      3. Lack of physical development

INFORMATION SHEET

C. Infants born after gestation of 37 weeks but with birth weight of 2,500 grams or less are usually classified as low birth weight infants rather than premature

D. Mortality rate is high

1. Prematurity is the leading cause of neonatal deaths

2. One-half of premature deaths occur within the first twenty-four hours

3. Five to eight percent of total newborns are premature

III. Common conditions which predispose to premature birth

A. Maternal

1. Severe malnutrition

2. Severe anemia

3. Alcoholism and other drug use

4. Excessive smoking

5. Maternal age, either very young or middle age

6. Pre-eclampsia

7. Multiple pregnancies or multiple births

8. Lack of prenatal care

9. Closely spaced pregnancies

10. Previous abortion or miscarriage

11. Physical or emotional stress

12. Diabetes and other endocrine disturbances

B. Fetal

1. Anomalies in development

2. Anemia

3. Maternal to fetal infections

a. Rubella

b. Syphilis

INFORMATION SHEET

c. Herpes simplex

d. Toxoplasmosis

e. Acute bacterial infections

C. Placental

1. Anomalies in development

2. Chronic placental deficiencies

3. Placenta praevia or abruptio placentae

IV. Appearance of premature infant

A. Skin is reddish pink and translucent with poor turgor

B. Extremities are thin with little muscle and subcutaneous tissue

C. Head and abdomen are large in proportion to body

D. Soles of feet are smooth

E. Superficial veins of abdomen and scalp are prominent

F. Lanugo is plentiful and widely distributed over back, shoulders, and extremities

G. Muscular and skeletal systems are immature

H. Scrotum is small with few rugae

I. Labia majora widely separated by protruding labia minora and clitoris

V. Problems of prematurity, their causes and nursing responsibilities

(NOTE: The nursing care given a premature infant depends greatly upon its physical condition and equipment available.)

A. Respiratory distress

1. Causes

a. Immature development

b. Weak gag and cough reflexes

INFORMATION SHEET

c. Anomalies

d. Oversedation of mother

e. Birth trauma

f. Atelectasis

g. Hyaline membrane disease

h. Respiratory infection

2. Nursing responsibilities

    a. Maintain oxygen and humidity at prescribed levels

        1) Oxygen concentration should not exceed 40 percent

        (NOTE: Higher levels of oxygen can lead to retrolental fibroplasia.)

        2) Oxygen concentration in incubator or isolette should be determined regularly, usually every two hours

        3) Relative humidity of sixty percent or more is usually prescribed

    b. Observe respiratory function

        1) Pulse rate

        2) Respiratory rate

        3) Chest movement

        4) Skin color

        5) Responsiveness

        6) Activity

    c. Be able to use a vital signs monitor

    (NOTE: In a fully equipped premature nursery, a vital signs monitor provides a continuous reading of pulse rate, respiratory rate, and temperature. Apical pulses, axillary temperatures, and visual observations of the baby's respirations are still a part of the nursing responsibility. The vital signs monitor helps to make the nursing observations more constant and accurate.)

INFORMATION SHEET

   d. Maintain careful, continual, recorded observations of the infant; blood gas tests by the laboratory provide the most precise determination of arterial blood oxygen

B. Instability of body temperature

   1. Causes

      a. Immature temperature-regulating center

      b. Lower heat production due to inactivity

      c. Small amount of subcutaneous fat

      d. Great body surface in relation to size

   2. Complications

      a. Chilling

      b. Decreased circulation

      c. Shock

   3. Nursing responsibilities

      a. Maintain constant temperature and humidity to help stabilize the infant's temperature

      b. Plan nursing care to limit number of times portholes are opened

      c. Maintain an axillary temperature between 96° and 98°F (35.5° to 36.5°C); rectal temperatures are usually not taken after admission to prevent damage and stimulation of the rectal sphincter

      d. Be sure that axilla is dry and that the infant's arm is held closely to the body for 5 to 10 minutes to insure accuracy of temperature

      e. Take axillary temperature at regular intervals even though the baby's temperature is monitored by mechanical means

      (NOTE: A temperature sensitive electrode is attached to the baby's abdomen and connected to the thermostat in the incubator. The heater is then set to turn off and on according to the infant's skin temperature.)

INFORMATION SHEET

C. Inadequate nutrition

  1. Causes

    a. Immature digestive system

    b. Weak suckling, swallowing, and gag reflexes

    c. Faulty absorption of nutrients

  2. Complications of feeding

    a. Aspiration

    b. Inadequate intake

    c. Abdominal distention

    d. Vomiting or regurgitation

    e. Dehydration

    f. Respiratory distress due to overfeeding

  3. Nursing responsibilities

    a. Provide adequate nutrition and fluids

      1) Intravenous infusion

      2) Gavage

      3) Bottle feeding

    b. Provide very small amounts of fluid or formula

    (NOTE: Infants may take as little as 5 to 10 cc per hour.)

    c. Measure and record intake accurately

    d. Gavage or bottle feedings are usually given every two hours

    (NOTE: Infants who have difficulty suckling and/or swallowing are fed by gavage. When the infant begins to suck on the gavage tube or his fingers, he may be given part gavage and part bottle feedings with a gradual switch to complete bottle feeding.)

INFORMATION SHEET

e. Use soft nipples for infants who suck weakly

f. Observe character and frequency of stools

(NOTE: Too rich formula may cause diarrhea or vomiting.)

g. Assist infant to eruct by changing his position or by patting or rubbing his back gently

h. Weigh infant at the same time each day

D. Fatigue

1. Causes

a. Constant handling and moving of infant

b. Lack of oxygen

c. Chilling

2. Complications

a. Exhaustion

b. Respiratory or cardiac distress

c. Gastrointestinal distress

d. Shock

3. Nursing responsibilities

a. Handle infant gently

b. Conserve infant's energy by not bathing daily; instead, cleanse face and diaper area as needed

(NOTE: Conserving the baby's energy should not mislead the nurse into avoiding contact altogether. The premature infant needs physical contact to aid in emotional growth and development.)

c. Omit clothing except diapers

d. Change position periodically

e. Avoid loud noises and/or jarring the incubator

f. Observe infant for change in level of activity such as twitching or stupor

g. Provide visual, audio, and tactile stimulation as the infant matures

INFORMATION SHEET

VI. Emotional support of the parents of the premature infant

A. Allow husband and wife to remain together as much as possible

B. Provide information concerning the infant and care needed

C. Recognize that their fears and anxieties are natural, normal, and acceptable behavior

D. Permit the parents to observe the infant as often and as much as is practical

(NOTE: If the mother is unable to go to the nursery, keep her informed of the baby's condition.)

E. Provide opportunity for them to ask questions and receive instructions concerning infant care

F. Permit physical contact with the infant when appropriate

G. Allow parents and particularly the mother to participate in infant care during her hospitalization and after her discharge

H. Provide individualized instruction for the parents before the infant is to be discharged

1. Special needs and how to meet them
2. Actual care of infant in nursery with assistance of nurse
3. Person to contact for assistance or advice after taking infant home

CARING FOR THE PREMATURE INFANT
UNIT VII

TEST

1. Match the terms on the right to the correct definition.

______a. Belch

______b. Pertaining to hearing

______c. Type of protozoon infection which may be transmitted from the mother to the fetus in utero or at birth

______d. Any deviation from the usual in form, structure, or location; abnormality or malformation

______e. Acute virus infection characterized by groups of vesicles surrounded by reddened skin area

______f. Infant born before the end of the thirty-seventh week of gestation

______g. Condition characterized by marked decrease of response to stimuli

______h. Administration of nourishment through a nasogastric tube

______i. Pertaining to the sense of touch

______j. Disorder of the alveoli and respiratory passages that causes inadequate expansion of the lungs

1. Stupor
2. Premature infant
3. Gavage
4. Hyaline membrane disease
5. Anomaly
6. Tactile
7. Toxoplasmosis
8. Eruct
9. Herpes simplex
10. Audio

2. Discuss the concept of the premature infant.

3. List common conditions which predispose to premature birth.

   a. Maternal

      1)

      2)

      3)

      4)

      5)

   b. Fetal

      1)

      2)

   c. Placental

      1)

      2)

4. Describe the appearance of the premature infant.

5. Discuss the following problems of prematurity.

   a. Respiratory distress

      1) Causes

2) Nursing responsibilities

b. Instability of body temperature

1) Causes

2) Complications

3) Nursing responsibilities

c. Inadequate nutrition
  1) Causes
  2) Complications of feeding
  3) Nursing responsibilities

d. Fatigue
  1) Causes
  2) Complications
  3) Nursing responsibilities

6. Discuss the emotional support of the parents of a premature infant.

CARING FOR THE PREMATURE INFANT
UNIT VII

ANSWERS TO TEST

1. a. 8
   b. 10
   c. 7
   d. 5
   e. 9
   f. 2
   g. 1
   h. 3
   i. 6
   j. 4

2. Discussion should include:

   a. The premature infant is one who is born earlier, smaller, and physically less mature than the full-term infant

   b. Determination of prematurity depends upon one or more of the following criteria

      1) Birth weight less than 2,500 grams or 5 1/2 pounds

      2) Gestation of less than 37 weeks

      3) Lack of physical development

   c. Infants born after gestation of 37 weeks but with birth weight of 2,500 grams or less are usually classified as low birth weight infants rather than premature

   d. Mortality rate is high

      1) Prematurity is the leading cause of neonatal deaths

      2) One-half of premature deaths occur within the first twenty-four hours

      3) Five to eight percent of total newborns are premature

3. a. Maternal--Any five of the following:

      1) Severe malnutrition

      2) Severe anemia

      3) Alcoholism and other drug use

      4) Excessive smoking

      5) Maternal age, either very young or middle age

6) Pre-eclampsia

7) Multiple pregnancies or multiple births

8) Lack of prenatal care

9) Closely spaced pregnancies

10) Previous abortion or miscarriage

11) Physical or emotional stress

12) Diabetes and other endocrine disturbances

b. Fetal--Any two of the following:

1) Anomalies in development

2) Anemia

3) Maternal to fetal infections

a) Rubella

b) Syphilis

c) Herpes simplex

d) Toxoplasmosis

e) Acute bacterial infections

c. Placental--Any two of the following:

1) Anomalies in development

2) Chronic placental deficiencies

3) Placenta praevia or abruptio placentae

4. Description should include:

a. Skin is reddish pink and translucent with poor turgor

b. Extremities are thin with little muscle and subcutaneous tissue

c. Head and abdomen are large in proportion to body

d. Soles of feet are smooth

e. Superficial veins of abdomen and scalp are prominent

f. Lanugo is plentiful and widely distributed over back, shoulders, and extremities

g. Muscular and skeletal systems are immature

h. Scrotum is small with few rugae

i. Labia majora widely separated by protruding labia minora and clitoris

5. Discussion should include:

a. Respiratory distress

1) Causes

a) Immature development

b) Weak gag and cough reflexes

c) Anomalies

d) Oversedation of mother

e) Birth trauma

f) Atelectasis

g) Hyaline membrane disease

h) Respiratory infection

2) Nursing responsibilities

a) Maintain oxygen and humidity at prescribed levels

1) Oxygen concentration should not exceed 40 percent

2) Oxygen concentration in incubator or isolette should be determined regularly, usually every two hours

3) Relative humidity of sixty percent or more is usually prescribed

b) Observe respiratory function

(1) Pulse rate

(2) Respiratory rate

(3) Chest movement

(4) Skin color

(5) Responsiveness

(6) Activity

c) Be able to use a vital signs monitor

d) Maintain careful, continual, recorded observations of the infant; blood gas tests by the laboratory provide the most precise determination of arterial blood oxygen

b. Instability of body temperature

1) Causes

a) Immature temperature-regulating center

b) Lower heat production due to inactivity

c) Small amount of subcutaneous fat

d) Great body surface in relation to size

2) Complications

a) Chilling

b) Decreased circulation

c) Shock

3) Nursing responsibilities

a) Maintain constant temperature and humidity to help stabilize the infant's temperature

b) Plan nursing care to limit number of times portholes are opened

c) Maintain an axillary temperature between 96° and 98°F (35.5° to 36.5°C); rectal temperatures are usually not taken after admission to prevent damage and stimulation of the rectal sphincter

d) Be sure that axilla is dry and that the infant's arm is held closely to the body for 5 to 10 minutes to insure accuracy of temperature

e) Take axillary temperature at regular intervals even though the baby's temperature is monitored by mechanical means

c. Inadequate nutrition

1) Causes

a) Immature digestive system

b) Weak suckling, swallowing, and gag reflexes

c) Faulty absorption of nutrients

2) Complications of feeding

a) Aspiration

b) Inadequate intake

c) Abdominal distention

d) Vomiting or regurgitation

e) Dehydration

f) Respiratory distress due to overfeeding

3) Nursing responsibilities

a) Provide adequate nutrition and fluids

(1) Intravenous infusion

(2) Gavage

(3) Bottle feeding

b) Provide very small amounts of fluid or formula

c) Measure and record intake accurately

d) Gavage or bottle feedings are usually given every two hours

e) Use soft nipples for infants who suck weakly

f) Observe character and frequency of stools

g) Assist infant to eruct by changing his position or by patting or rubbing his back gently

h) Weigh infant at the same time each day

d. Fatigue

  1) Causes

    a) Constant handling and moving of infant

    b) Lack of oxygen

    c) Chilling

  2) Complications

    a) Exhaustion

    b) Respiratory or cardiac distress

    c) Gastrointestinal distress

    d) Shock

  3) Nursing responsibilities

    a) Handle infant gently

    b) Conserve infant's energy by not bathing daily; instead, cleanse face and diaper area as needed

    c) Omit clothing except diapers

    d) Change position periodically

    e) Avoid loud noises and/or jarring the incubator

    f) Observe infant for change in level of activity such as twitching or stupor

    g) Provide visual, audio, and tactile stimulation as the infant matures

6. Discussion should include:

  a. Allow husband and wife to remain together as much as possible

  b. Provide information concerning the infant and care needed

  c. Recognize that their fears and anxieties are natural, normal, and acceptable behavior

  d. Permit the parents to observe the infant as often and as much as is practical

e. Provide opportunity for them to ask questions and receive instructions concerning infant care

f. Permit physical contact with the infant when appropriate

g. Allow parents and particularly the mother to participate in infant care during her hospitalization and after her discharge

h. Provide individualized instruction for the parents before the infant is to be charged

  1) Special needs and how to meet them

  2) Actual care of infant in nursery with assistance of nurse

  3) Person to contact for assistance or advice after taking infant home

CARING FOR THE NEWBORN WITH ABNORMALITIES
UNIT VIII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list and describe types of abnormalities and discuss nursing responsibilities concerning the abnormalities. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with this unit to the correct definitions.
2. List abnormalities of congenital origin and those due to birth injuries and infections.
3. Discuss the incidence of chromosomal aberrations.
4. Describe Downs' syndrome including characteristics, complications, prognosis, and nursing responsibilities.
5. Describe central nervous system abnormalities including hydrocephaly, anencephaly, and spina bifida.
6. Discuss incidence, symptoms, treatment, and prognosis of congenital heart defects.
7. Differentiate between the two classes of heart defects.
8. List types of acyanotic and cyanotic defects.
9. Discuss defects of the gastrointestinal system.
10. Discuss defects of the musculoskeletal system, talipes and congenital hip dislocation.
11. Discuss the hemolytic diseases, ABO and Rh incompatibilities, indicating which condition is the most serious.
12. Discuss metabolism errors, phenylketonuria and cretinism.
13. Describe characteristics, treatment and nursing responsibilities, and prognosis for the newborn of a diabetic mother.
14. Discuss causes, characteristics, treatment, nursing responsibilities, and prognosis for intracranial hemorrhage.

15. Discuss the two most common nerve injuries.

16. Discuss the following infections as they affect neonates: thrush, congenital syphilis, epidemic diarrhea, rubella, and impetigo.

17. List ways of providing emotional support to the parents of a neonate with an abnormality.

CARING FOR THE NEWBORN WITH ABNORMALITIES
UNIT VIII

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objectives.

  B. Provide students with information sheet.

  C. Make transparencies.

  D. Discuss terminal and specific objectives.

  E. Discuss information sheet.

  F. Provide current articles from periodicals concerning care of neonates with anomalies.

  G. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Research one type of abnormality which may be present at birth.

  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Transparency masters

    1. TM 1--The Normal Heart

    2. TM 2--Coarctation of the Aorta and Patent Ductus Arteriosus

3. TM 3--Atrial and Ventricular Septal Defects
4. TM 4--Tetralogy of Fallot and Transposition of the Great Vessels
5. TM 5--Feeding Aids for Cleft Palate Babies
6. TM 6--Talipes

II. References:

A. Bleier, Inge J. *Maternity Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1971.

B. Broadribb, Violet, and Charlette Corliss. *Maternal-Child Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

C. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

D. Friesner, Arlyne, and Beverly Raff. *Obstetric Nursing.* Flushing, New York: Medical Examination Publishing Company, 1974.

E. Ingalls, A. Joy, and M. Constance Salerno. *Maternal and Child Health Nursing.* St. Louis, Missouri: The C. V. Mosby Company, 1971.

F. Lerch, Constance. *Maternity Nursing.* St. Louis, Missouri: The C. V. Mosby Company, 1974.

G. Isler, Charlotte. "Infection: Constant Threat to Perinatal Life." *RN*, August 1975.

III. Other materials:

A. Films

1. "Mongolism - Report on Down's Syndrome." International Film Bureau, 322 South Michigan Avenue, Chicago, Illinois.
2. "Congenital Heart Defects." American Heart Association.

   (NOTE: The above films are available to Oklahoma instructors from the Oklahoma State Department of Health.)
3. "PKU Mental Deficiency Can Be Prevented." Ames Company.
4. "Congenital Anomalies of the Heart." Squibb Film Library.
5. "Erythroblastosis Fetalis." Squibb Film Library.
6. "Tetralogy of Fallot." Squibb Film Library.
7. "Patent Ductus Arteriosus." Squibb Film Library.

B. Filmstrip--"Cleft Lip and Cleft Palate." Medical Electronic Educational Services, Inc.

C. Charts--Clinical Education Aids. Ross Laboratories.

   1. No. 4, "Alimentary Tract Obstructions of Infancy."
   2. No. 6, "Neonatal Respiratory Distress."
   3. No. 7, "Congenital Heart Abnormalities."
   4. No. 11, "Cleft Lip and Cleft Palate."
   5. No. 14, "Abnormalities of the Central Nervous System."
   6. No. 15, "Congenital Orthopedic Abnormalities."

D. Publications

   1. *The Road to Normalcy.* Mead Johnson and Company.
   2. *The Phenomena of Early Development.* Ross Laboratories.

CARING FOR THE NEWBORN WITH ABNORMALITIES
UNIT VIII

INFORMATION SHEET

I. Terms and definitions

   A. Down's syndrome--Chromosomal anomaly in which the affected person has 47 chromosomes

   B. Hydrocephaly--Abnormal condition caused by an increase in the volume of cerebrospinal fluid within the skull

   C. Shunt--Alternate pathway or bypass

   D. Anencephaly--Malformation of the brain and cranium with the cerebral hemispheres missing or reduced to small masses

   E. Spina bifida--Congenital defect in the closure of the skull or vertebral canal with or without herniation

   F. Meningocele--Spina bifida with protrusion of the cerebral or spinal meninges

   G. Meningomyelocele--Spina bifida with protrusion of a portion of the spinal cord and membranes

   H. Myelomeningocele--Spina bifida with protrusion of the meninges and part of the spinal cord or cauda equina

   I. Spina bifida occulta--Imperfect closure of the spinal canal

   J. Paraplegia--Paralysis of the lower limbs

   K. Congenital heart defect--Any failure of the heart or the great vessels near the heart to mature or develop normally in the prenatal or immediate neonatal period

   L. Hemolytic--Pertaining to the destruction of red blood cells

   M. Coombs' test--Laboratory test that reveals certain antigen-antibody reactions; used in diagnosing various types of hemolytic diseases

   N. Kernicterus--Jaundice of the nuclear masses of the brain

   O. Opisthotonos--Arched position of the body with the head and lower limbs bent backward due to tetanic spasms of the muscles of the back

INFORMATION SHEET

P. Phenylalanine--One of the amino acids produced in the metabolism of proteins

Q. Cretinism--Arrested physical and mental development due to lack of thyroid

II. Types of abnormalities

A. Congenital

1. Chromosomal aberrations
2. Central nervous system abnormalities
3. Congenital heart defects
4. Gastrointestinal malformations
5. Musculoskeletal defects
6. Hemolytic diseases
7. Metabolism errors
8. Diabetes in the mother

B. Birth injuries

1. Intracranial hemorrhage
2. Nerve injuries
3. Fractures and dislocations

C. Infections

1. Ophthalmia neonatorum
2. Thrush
3. Congenital syphilis
4. Epidemic diarrhea
5. Congenital rubella
6. Impetigo

INFORMATION SHEET

III. Chromosomal aberrations

   A. Occurrence is approximately one in every six hundred births

   B. Down's syndrome or mongolism is the most common of the chromosomal aberrations

   C. Other types are Klinefelter's and Turner's syndromes in which the individual has an extra sex chromosome

IV. Down's syndrome

   A. Characteristics

   (NOTE: This condition is nearly always recognizable at birth.)

      1. Slanting eyes

      2. Flat nose

      3. Thick protruding tongue

      4. Short hands with deep horizontal crease in palm and incurving fifth finger

      5. Wide space between first and second toes

      6. Decreased muscle tone

      7. Short, broad neck and head

   B. Complications

      1. Heart or eye defects

      2. Retarded mental and physical development

      3. Poor resistance to infection

   C. Prognosis--Depending upon severity of other deformities and mental retardation, child may require institutionalization

   D. Nursing responsibilities

      1. Feed with care; due to lack of muscle tone the infant may have difficulty sucking and swallowing

      2. Provide audio and visual stimulation and extra personal attention to assist infant to develop to fullest potential

INFORMATION SHEET

V. Central nervous system abnormalities

  A. Hydrocephaly

    1. Causes

      a. Obstruction in the free circulation of cerebrospinal fluid

      b. Defective absorption of the cerebrospinal fluid

    2. Characteristics

      a. Symmetrical increase of head size; circumference 14.9 inches or 37.8 cm or more

      b. Varying degrees of mental retardation

      c. Retarded motor function

      d. Bulging of the fontanels

      e. Separation of the suture lines

      f. Shiny scalp with distended veins

      g. Strabismus

      h. *Setting sun* eyes

      (NOTE: The eyes appear to be pushed downward with the sclera visible above the iris.)

    3. Complications

      a. Size and weight of head increases

      b. Neck muscles become weak

      c. Infant becomes unable to move head

      d. Increasing intracranial pressure causes brain damage with symptoms such as irritability, vomiting, or convulsions

      e. Death may occur due to complications

INFORMATION SHEET

4. Treatment--Surgical implantation of a shunt to drain the excess fluid into the right atrium
    a. When treated early enough, child may have only minimal brain damage
    b. Shunts may have to be replaced several times
    c. Complications following surgery may include septicemia or pulmonary thrombosis
5. Prognosis--Always guarded
6. Nursing responsibilities

    (NOTE: Long terms of hospitalization necessitate extra attention from nursing personnel to aid development.)

    a. Change position frequently to prevent pressure areas or skin breakdown of bony prominences, head, and ears
    b. Always provide support for the head and neck
    c. Feed carefully and slowly
    d. Assist the infant to eruct by position change or backrub
    e. Measure head daily or as prescribed
    f. Provide emotional support by talking and singing to the infant, by audio and visual stimulation, and with toys that are lightweight and brightly colored

B. Anencephaly

1. Characteristics
    a. Scalp and cranium may be missing
    b. Top part of head is extremely small or appears to be absent
2. Prognosis--No chance of survival

INFORMATION SHEET

C. Spina bifida

(NOTE: The types of spina bifida are spina bifida occulta, meningocele, meningomyelocele, and myelomeningocele.)

1. Characteristics

   a. Imperfect closure or protrusion in the back somewhere along the spinal column; most common site is the lumbosacral area

   b. Defect may range in size from very small to very large and may leak spinal fluid

2. Complications

   (NOTE: They vary greatly depending upon site and amount of involvement.)

   a. Hydrocephaly

   b. Urinary or fecal incontinence

   c. Loss of sensation or motor control below site

   d. Club feet (talipes equinovarus)

   e. Congenital hip dislocation

   f. Infection

3. Treatment

   a. Surgical removal or repair of the defect

   b. Repair and/or rehabilitation of complications

4. Prognosis

   a. Incidence of infection is high

   b. Child is usually paraplegic

   c. Much surgery and rehabilitation will be necessary if the child survives

INFORMATION SHEET

5. Nursing responsibilities
    a. Position to prevent pressure on the protruding defect
    b. Change position frequently unless prescribed otherwise
    c. Cleanse perineum frequently and treat to minimize irritation due to incontinence
    d. Protect site aseptically to prevent infection when leaking occurs or following surgery
    e. Provide emotional support for the infant and parents

VI Congenital heart defects (Transparencies 1, 2, 3, and 4)

A. Incidence
    1. Cause more infant deaths than any other anomaly
    2. May be slight enough to be asymptomatic and never detected
    3. May be surgically corrected in the majority of infants who survive

B. Symptoms
    1. Cyanosis
    2. Dyspnea
    3. Tachycardia
    4. Feeding difficulties or choking spells
    5. Failure to gain weight or strength
    6. Fatigue

C. Treatment
    1. Medical to improve condition of child
    2. Surgical repair done in stages and usually delayed until preschool or school age

D. Prognosis--Usually favorable but depends upon the condition and size and age of the child

INFORMATION SHEET

VII. Classification of heart defects

A. Acyanotic

1. Indicates very little or no cyanosis with oxygen saturation of more than eighty-five percent in the peripheral circulation

2. Occurs in any heart defect where there is little or no mixing of oxygenated blood with unoxygenated blood

3. May be asymptomatic; may become more severe and disabling and require treatment during childhood or later

B. Cyanotic

(NOTE: Degree of cyanosis is affected by the number of abnormalities and by other complications.)

1. Indicates presence of noticeable cyanosis with oxygen saturation of less than eighty-five percent in the peripheral arterial circulation

2. Occurs in any heart defect which allows unoxygenated blood from the right side of the heart to mix with oxygenated blood from the left side of the heart

3. Can occur at atrial, ventricular, or aortic level and with a combination of defects

VIII. Types of acyanotic and cyanotic defects

A. Acyanotic

1. Coarctation of the aorta (Transparency 2)

(NOTE: Stenosis of the aorta causes a diminished flow of blood through the aorta.)

2. Patent ductus arteriosus (Transparency 2)

(NOTE: The fetal ductus arteriosus fails to close and permits blood to flow from the aorta into the pulmonary artery.)

3. Atrial septal defect (Transparency 3)

(NOTE: The foramen ovale fails to close and permits flow of blood from the left atrium into the right atrium.)

INFORMATION SHEET

4. Ventricular septal defect (Transparency 3)

   (NOTE: An abnormal opening in the ventricular wall allows blood to flow from the left ventricle into the right ventricle.)

B. Cyanotic

1. Tetralogy of Fallot (Transparency 4)

   (NOTE: This is the most common type of cyanotic defect and is a combination of four defects: [a.] pulmonary stenosis, a narrowing of the pulmonary artery with decreased flow of blood to the lungs; [b.] ventricular septal defect, an opening between the ventricles which allows the mixing of oxygenated and unoxygenated blood; [c.] overriding aorta, the aorta is displaced to the right and blood enters it from both ventricles; and [d.] hypertrophy of the right ventricle, the right ventricle is enlarged by the increased effort needed to pump the blood through the narrowed pulmonary artery.)

2. Transposition of the great vessels (Transparency 4)

   (NOTE: The aorta arises from the right ventricle and the pulmonary artery from the left ventricle.)

IX. Defects of the gastrointestinal system

A. Cleft lip and/or palate

1. Description--Failure of the maxillary and premaxillary processes to fuse during the fifth to eighth week of intrauterine life

2. Treatment

   a. Surgical repair of lip very soon after birth

   b. Repair of palate usually after age of ten months

3. Preoperative nursing responsibilities

   (NOTE: Special feeding techniques are necessary due to difficulties in sucking and/or swallowing.)

   a. Allow more time than usual for feedings

   b. Feed slowly with a soft-tipped syringe, rubber-tipped medicine dropper, Brecht feeder, or spoon (Transparency 5)

INFORMATION SHEET

c. Hold infant in an upright position to facilitate swallowing

d. Assist infant to eruct frequently because the infant with a mouth deformity swallows more air than the average infant

e. Use restraints as prescribed to prevent infant from scratching the surgical site and to help infant become accustomed to them

4. Postoperative nursing responsibilities

   a. Prevent infant from sucking or crying; these activities strain the suture line

   b. Position carefully on side or back to avoid pressure on the operative site

   c. Keep suture line clean

   d. Use restraints to keep infant's hands away from the operative site

   e. Hold and cuddle to provide for emotional needs

B. Other digestive tract abnormalities

1. Other abnormalities occur infrequently

2. Nursing responsibilities will depend upon the type of abnormality; many of these conditions will require immediate surgical repair

3. All infants should be observed closely for lack of function or symptoms of dysfunction

   (NOTE: Other types of digestive tract abnormalities include improper development of the esophagus or the rectum, herniation of part of the abdominal contents into the umbilical cord, pyloric stenosis, biliary tract obstruction, and diaphragmatic hernia.)

X. Defects of musculoskeletal system

A. Talipes--Any one of a variety of deformities of the foot; most common foot deformity is talipes equinovarus or clubfoot (Transparency 6)

1. Characteristic--One or both feet are twisted out of shape or out of usual position

INFORMATION SHEET

2. Treatment
    a. Manipulation and exercise
    b. Corrective shoes or other devices
    c. Plaster cast on affected foot
    d. Surgical correction

B. Congenital hip dislocation--Partial or complete displacement of the head of the femur from a malformed hip socket

1. Characteristics--Occurs more often in girls
    a. Limited abduction of the hip joint
    b. Asymmetry of the gluteal folds
2. Treatment
    a. Manipulation of the femur into place followed by application of a splint or cast
    b. Surgical correction if manipulation is delayed or unsuccessful

XI. Hemolytic diseases

A. ABO incompatibility--Mild condition

1. Symptoms
    a. Jaundice within first 48 hours after birth
    b. Mild anemia
    c. Negative or low Coombs' test
2. Treatment and nursing responsibilities
    a. Exchange transfusion if bilirubin is high
    b. Light therapy
3. Prognosis--Very good; recovery is usually spontaneous

INFORMATION SHEET

B. RH incompatibility or erythroblastosis fetalis--May be a mild to serious or fatal condition

1. Signs and symptoms
    a. Yellow vernix caseosa
    b. Anemia, present at birth or soon after
    c. Jaundice within 24 hours after birth
    d. Enlarged liver and spleen
    e. Positive Coombs' test
    f. Elevated bilirubinemia
    g. Lethargy
    h. Generalized weakness
2. Complications
    a. Kernicterus
        1) Degeneration of central nervous tissue due to persistent high bilirubinemia
        2) Symptoms include extreme lethargy, opisthotonos, convulsions, and a shrill high-pitched cry
    b. Hydrops fetalis
        1) Most severe form of erythroblastosis fetalis
        2) Symptoms include excessive edema, marked anemia, jaundice, and enlargement of the liver and spleen
        3) Affected infants are stillborn or live only a short time
3. Treatment
    a. Tests usually from umbilical cord blood, including Coombs' test, serum bilirubin, Rh determination, and others
    b. Exchange transfusions when indicated

    (NOTE: A severely affected infant may be transfused immediately after birth before laboratory results are available.)

INFORMATION SHEET

4. Nursing responsibilities

    a. Observe all neonates for jaundice; report to the physician immediately when jaundice occurs

    b. Change position frequently to avoid atelectasis

    c. Prevent secondary infection

    d. Omit feedings as prescribed before transfusions

    e. Observe carefully for signs of shock following transfusions

    f. Observe fluid intake, oral and/or parenteral

XII. Metabolism errors

A. Phenylketonuria (PKU)

1. Characteristics

    a. Liver enzyme necessary to change the essential amino acid phenylalanine to tyrosine is absent

    b. Phenylalanine builds up in the blood serum to as much as 20 times the normal level and when untreated causes severe mental retardation

    (NOTE: Phenylalanine and its metabolites are excreted in the urine.)

2. Diagnostic test--Guthrie blood test

    a. Blood is tested after infant has received feedings for at least twenty-four hours, usually the third or fourth day after birth

    b. Test is repeated in four or five weeks if positive

    c. Oklahoma state law requires the performance of the test on all neonates

3. Treatment

    (NOTE: Best results are obtained when treatment is begun early. After a few years of treatment, normal diet may be tolerated.)

    a. Early recognition of the disease

    b. Administration of low phenylalanine formula/diet as soon as the condition is diagnosed

INFORMATION SHEET

B. Cretinism

1. Characteristics

   (NOTE: Infant may appear normal at birth; clinical signs and symptoms are not fully developed before age three to six months.)

   a. Large, protruding tongue
   b. Dry skin
   c. Coarse hair
   d. Protruding abdomen
   e. Obstinate constipation
   f. Poor muscle tone
   g. Depressed reflexes
   h. Hoarse cry
   i. Puffy eyes
   j. Umbilical hernia

2. Causes

   a. Absence of the thyroid gland
   b. Defective production of thyroxin
   c. Maternal ingestion of medication which suppresses thyroid function
   d. Iodide deficiency

3. Treatment

   a. Administration of a thyroid preparation is necessary throughout life
   b. Early treatment and adequate dosage permit fairly normal physical growth and mental development

(NOTE: Other forms of metabolism errors are Apert's syndrome, Cornelia de Lange syndrome, galactosemia, and maple syrup urine disease. They occur rarely and are usually associated with mental retardation. Many affected children are short-lived.)

INFORMATION SHEET

XIII. Newborn of diabetic mother

A. Characteristics

1. Premature birth
2. Obese appearance due to generalized edema
3. Greater urinary output and weight loss
4. Poor muscle tone
5. Listlessness
6. Respiratory distress due to hyaline membrane disease and atelectasis

B. Treatment and nursing responsibilities

1. Blood glucose determinations are usually done at birth and every two to four hours until glucose level is stable
2. Gastric secretions are usually increased and may require aspiration to prevent regurgitation
3. Respiratory secretions are also increased, necessitating frequent suctioning of the respiratory tract
4. Infant is placed in an incubator and treated as premature regardless of size
5. Feedings are usually withheld for 24 to 72 hours until the infant has lost much of the excess body fluid
6. If blood sugar is abnormally low, the physician may administer glucose intravenously

C. Prognosis--Good if the infant progresses well the first few days after birth

XIV. Intracranial hemorrhage

A. Causes

1. Birth trauma
2. Precipitate delivery
3. Hard, prolonged labor

INFORMATION SHEET

4. Difficult delivery
5. Premature birth

B. Characteristics

1. Weak, shrill, or high-pitched cry
2. Poor reflexes
3. Thrashing movements of the extremities
4. Periods of apnea and cyanosis
5. Difficult respirations
6. Poor sucking reflex
7. Vomiting
8. Bulging or tense fontanels
9. Convulsions

C. Treatment

1. Cranial pressure may be relieved by spinal or dural taps
2. Elevation of the head of the bed helps reduce cerebral venous pressure
3. Anticonvulsive medication may be ordered
4. Vitamin K may be given to minimize bleeding

D. Nursing responsibilities

1. Handle gently and as little as possible
2. Avoid loud noises or jarring infant
3. Keep infant in an incubator or isolette to provide a regulated atmosphere
4. Withhold feedings until condition is stabilized
5. Maintain close observation of vital signs and general behavior

INFORMATION SHEET

E. Prognosis

1. Death may result due to respiratory failure
2. Survivors may be mentally retarded and have cerebral palsy, epilepsy, or behavior problems
3. Recovery may be complete
4. Prognosis depends upon the severity and location of the hemorrhage

XV. Common nerve injuries

A. Facial paralysis

1. Incidence--Most common type
2. Characteristics
    a. No movement in muscles on affected side
    b. Mouth pulls toward unaffected side
3. Treatment--Recovery is spontaneous, usually without any residual damage

B. Paralysis of upper arm or Erb's palsy

1. Incidence--Occurs during a difficult delivery when pressure is exerted on the arm
2. Characteristics
    a. Arm does not move
    b. Muscles in affected arm are flaccid
3. Treatment
    a. Positioning and support of the affected arm
    b. Physical therapy
    c. Surgery if nerve is severely damaged
4. Nursing responsibilities
    a. Observe neonate for evidence of injury after difficult delivery
    b. Move or turn infant carefully to prevent further injury
5. Prognosis--Good if nerves have not been severely damaged

INFORMATION SHEET

XVI. Infections and their effects on neonates

A. Thrush

1. Cause--Fungus infection, Candida albicans

   a. May be contracted during birth from an infected birth canal

   b. May be transmitted by infected personnel who use poor aseptic technique

2. Symptom--White patches on the mucous membranes of the mouth that cannot be easily removed

3. Treatment

   a. Antibiotics

   b. Gentian violet solution to affected areas

4. Nursing responsibilities

   a. Isolate the infant

   b. Observe intake

   (NOTE: If there is much involvement, the infant may be reluctant to suckle.)

   c. Give water after feeding to aid in cleansing mouth

B. Congenital syphilis

1. Cause--Transfer of the spirochete Treponema pallidum through the placenta from an infected mother

2. Symptoms

   a. Highly infectious skin lesions on face, palms, buttocks, or soles of the feet

   b. Nasal discharge associated with sniffing sound on inspiration

   (NOTE: The discharge is thick and almost continuous and may be blood-tinged.)

   c. Bleeding ulcerations on mucous membranes

INFORMATION SHEET

- d. Enlargement of liver, spleen, and lymph nodes
- e. Tender joints
- f. Positive serology

3. Complications--Pathological changes in bones, eyes, and nervous system if not treated

4. Nursing responsibilities
    - a. Isolate infant
    - b. Administer antibiotics as prescribed

C. Epidemic diarrhea

1. Causes
    - a. Causative organisms--Staphylococci or E. coli
    - b. Overcrowding in the nursery
    - c. Poor personal hygiene of personnel or mothers
    - d. Poor aseptic technique
2. Symptom--Sudden onset of watery, yellowish green stools
3. Treatment
    - a. Antibiotics
    - b. Prevention of dehydration through intravenous infusion
4. Prognosis--Mortality rate is high
5. Nursing responsibilities
    - a. Isolate any suspected case immediately
    - b. Maintain proper aseptic technique
    - c. Isolate the infant of an unclean mother
    - d. Keep formula refrigerated
    - e. Maintain sterility of feeding equipment

INFORMATION SHEET

f. Record intake and output

g. Provide special care of the buttocks

D. Rubella

1. Cause--Maternal infection during the first trimester of pregnancy may result in one or more deformities

2. Characteristics

a. Rubella should be suspected in all cases of deformity

b. Cultures of rubella virus may be obtained from pharyngeal secretions, urine, cerebrospinal fluid, and other secretions or tissues

3. Complications

a. Excretion of the virus for several months after birth even when no abnormalities are present can spread the infection to others

b. The ears, heart, and eyes are most frequently affected

4. Treatment and prognosis will depend upon the type and severity of the abnormality

E. Impetigo

1. Causes

a. Staphylococci or streptococci organisms

b. Break in aseptic technique

c. Contact with infected person

2. Symptom--Blebs which are most likely to develop in folds, creases, and moist surfaces

3. Treatment and nursing responsibilities

a. Isolate the affected infant

b. Maintain aseptic technique

c. Remove crusts with soap and water

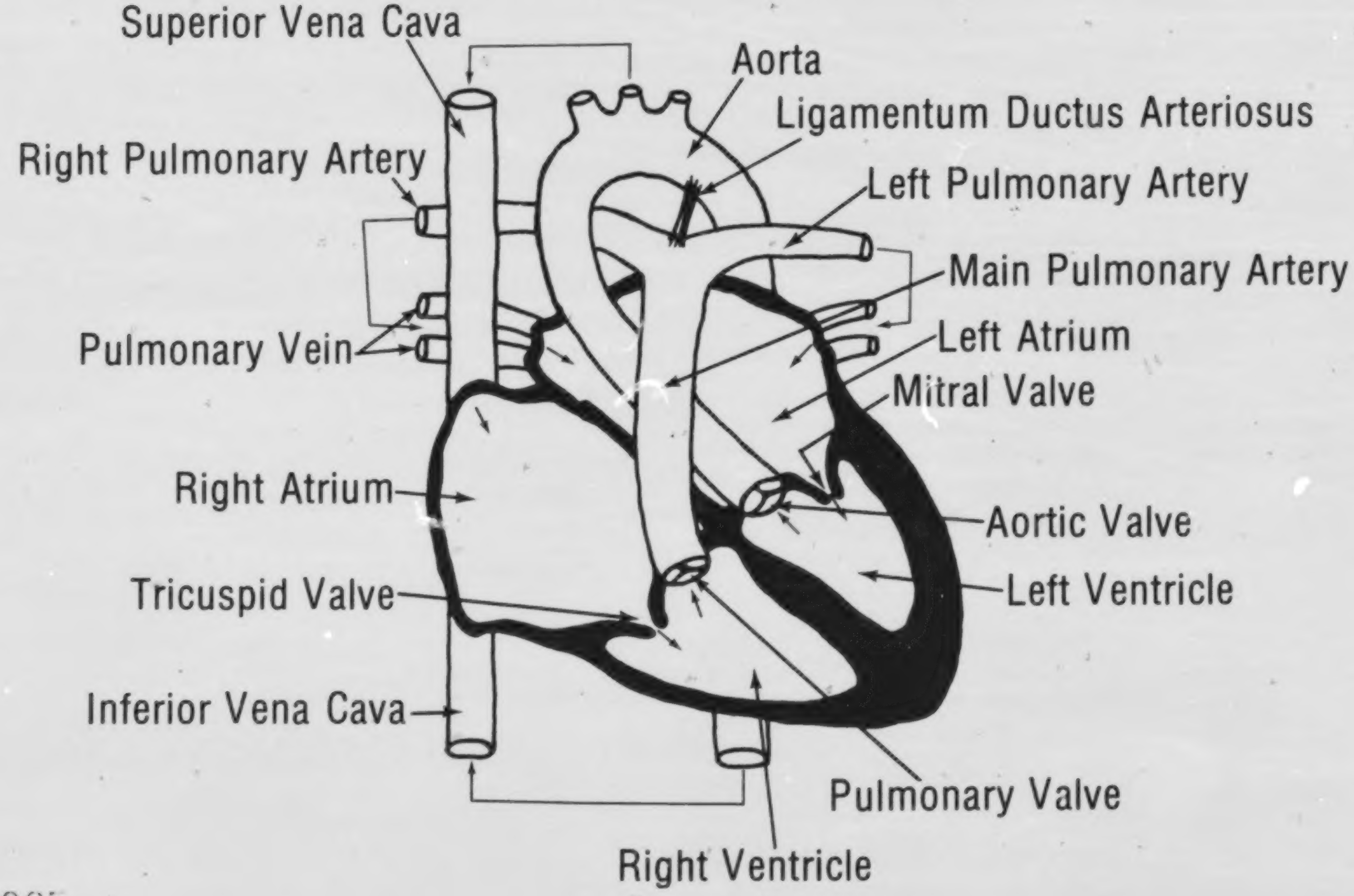
INFORMATION SHEET

  - d. Apply prescribed ointment
  - e. Administer antibiotics as prescribed
  - f. Prevent complicatons such as dehydration

XVII. Emotional support for parents

- A. Allow time for parents to ask questions and express fears and feelings
- B. Permit them to assist with infant care as much as possible
- C. Instruct in any special aspects of infant care
- D. Report any specific concerns to the proper person
- E. Be aware of community agencies which offer assistance for children with unusual problems

The Normal Heart


Superior Vena Cava
Aorta
Ligamentum Ductus Arteriosus
Right Pulmonary Artery
Left Pulmonary Artery
Main Pulmonary Artery
Left Atrium
Pulmonary Vein
Mitral Valve
Right Atrium
Aortic Valve
Left Ventricle
Tricuspid Valve
Inferior Vena Cava
Pulmonary Valve
Right Ventricle

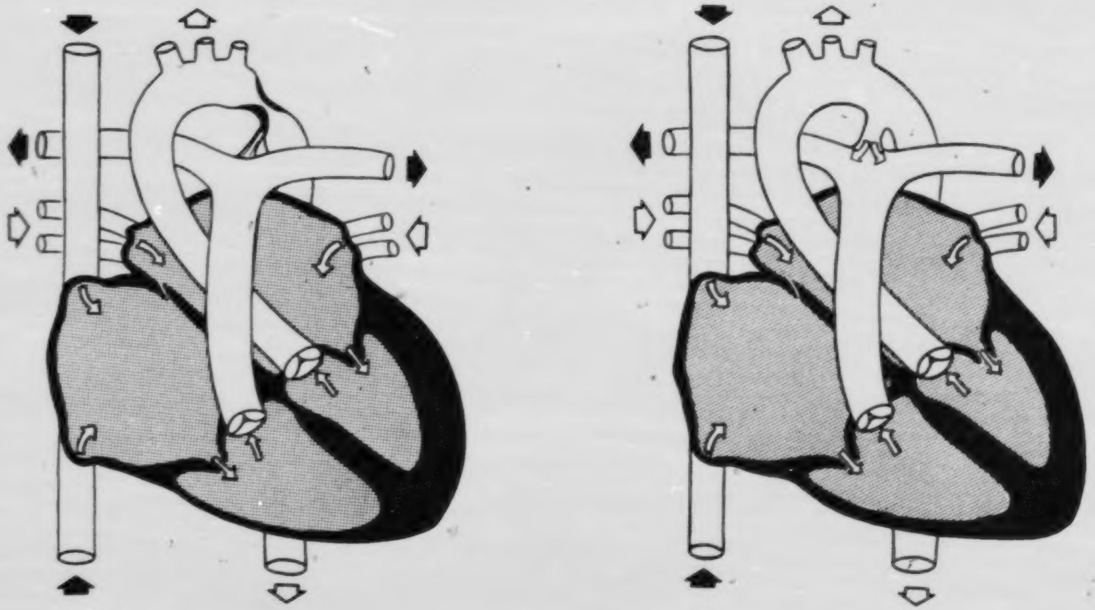
TM 1

985

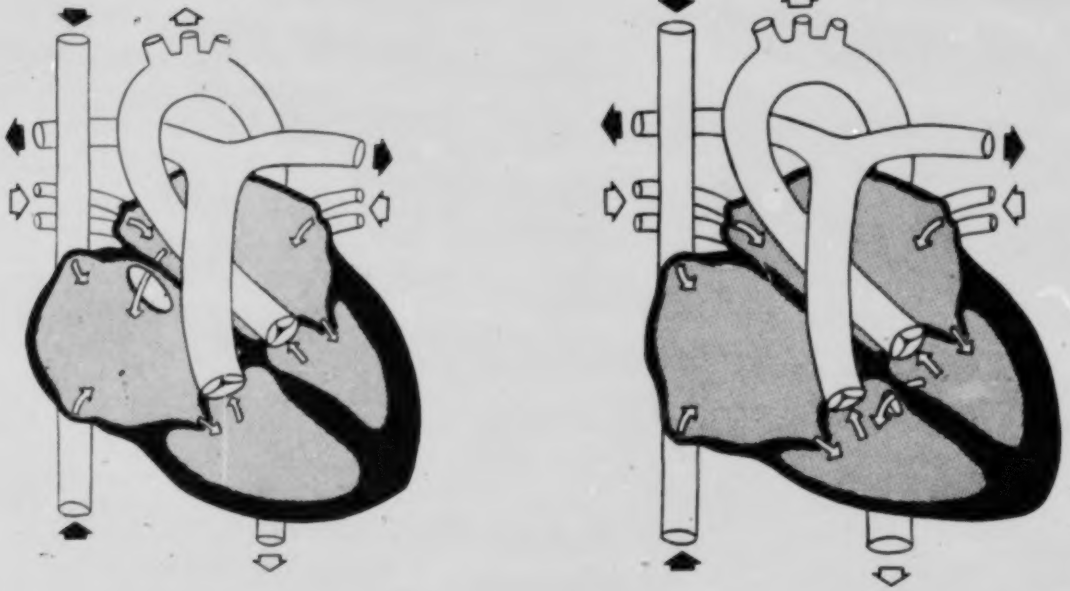
986

N II - 393-C

Coarctation of the Aorta and Patent Ductus Arteriosus



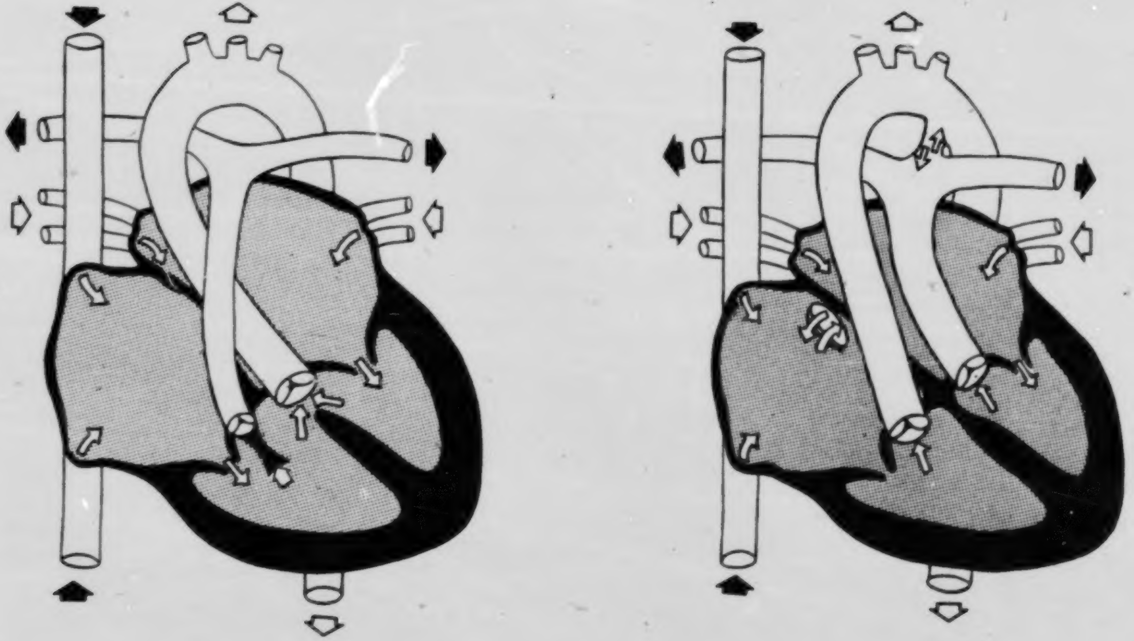
Atrial and Ventricular Septal Defects



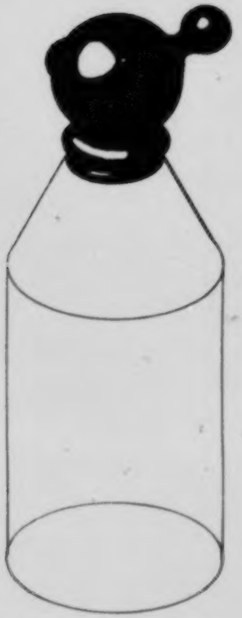
TM 3

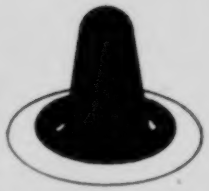
N II - 397-C

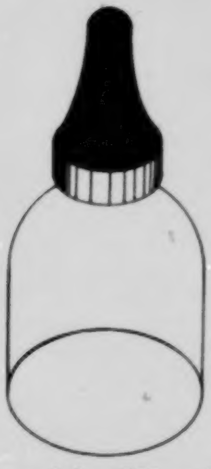
Tetralogy of Fallot and Transposition of the Great Vessels

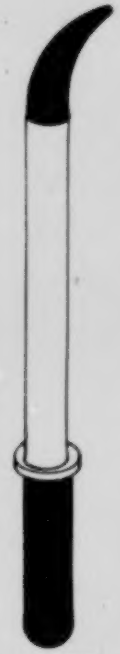


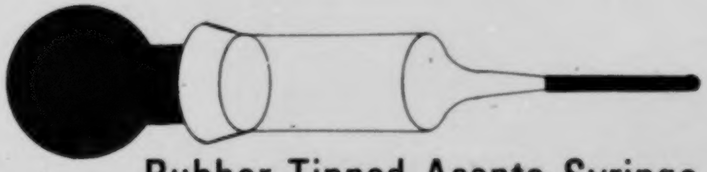
Feeding Aids for Cleft Palate Babies

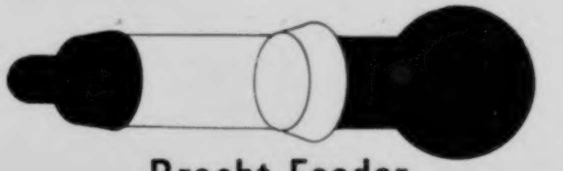

"Ducky" Nipple


"Premie" Nipple

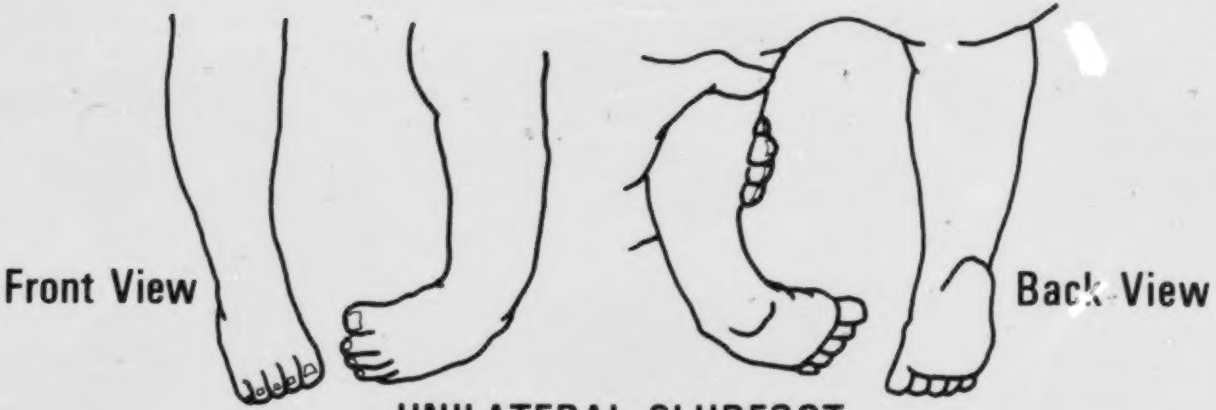

Lamb's Nipple


Rubber-Tipped
Medicine Dropper

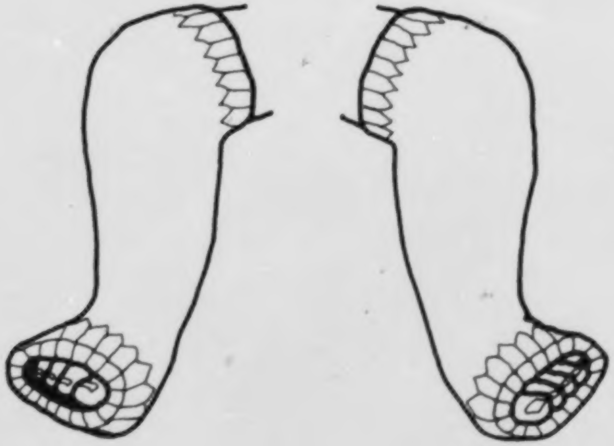

Rubber-Tipped Asepto Syringe


Brecht Feeder

Talipes


Front View
Back View

UNILATERAL CLUBFOOT



Casting for Clubfoot showing Petalling of Cast

CARING FOR THE NEWBORN WITH ABNORMALITIES
UNIT VIII

TEST

1. Match the terms on the right to the correct definition. (The answers to "a" through "l" are on this page.)

_____a. Abnormal condition caused by an increase in the volume of cerebrospinal fluid within the skull

_____b. Alternate pathway or bypass

_____c. Any failure of the heart or the great vessels near the heart to mature or develop normally in the prenatal or immediate neonatal period

_____d. Malformation of the brain and cranium with the cerebral hemispheres missing or reduced to small masses

_____e. Congenital defect in the closure of the skull or vertebral canal with or without herniation

_____f. Spina bifida with protrusion of the cerebral or spinal meninges

_____g. Spina bifida with protrusion of a portion of the spinal cord and membranes

_____h. Spina bifida with protrusion of the meninges and part of the spinal cord or cauda equina

_____i. Paralysis of the lower limbs

_____j. Chromosomal anomaly in which the affected person has 47 chromosomes

_____k. Jaundice of the nuclear masses of the brain

_____l. Pertaining to the destruction of red blood cells

1. Meningomyelocele
2. Down's syndrome
3. Hydrocephaly
4. Hemolytic
5. Myelomeningocele
6. Congenital heart defect
7. Paraplegia
8. Shunt
9. Spina bifida
10. Kernicterus
11. Meningocele
12. Anencephaly

(Answers for "m" through "q" are on this page.)

_____m. Laboratory test that reveals certain antigen-antibody reactions; used in diagnosing various types of hemolytic diseases

_____n. Arched position of the body with the head and lower limbs bent backward due to tetanic spasms of the muscles of the back

_____o. One of the amino acids produced in the metabolism of proteins

_____p. Arrested physical and mental development due to lack of thyroid

_____q. Imperfect closure of the spinal canal

13. Spina bifida occulta
14. Opisthotonos
15. Cretinism
16. Coombs' test
17. Phenylalanine

2. List abnormalities in each of the following categories.

a. Infections

1)

2)

3)

4)

b. Congenital

1)

2)

3)

4)

5)

c. Birth injuries

1)

2)

3. Discuss the incidence of chromosomal aberrations.

4. Describe Downs' syndrome.
   a. Characteristics

   b. Complications

   c. Prognosis

   d. Nursing responsibilities

5. Describe the following central nervous system abnormalities.
   a. Anencephaly
      1) Characteristics

      2) Prognosis--

b. Spina bifida

1) Characteristics

2) Complications

a)

b)

c)

3) Treatment

4) Prognosis

5) Nursing responsibilities

c. Hydrocephaly

1) Causes

2) Characteristics

3) Complications

4) Treatment--

5) Prognosis--

6) Nursing responsibilities

6. Discuss congenital heart defects.

a. Incidence

b. Symptoms

1)

2)

3)

4)

5)

c. Treatment

d. Prognosis--

7. Differentiate between the two classes of heart defects by placing an "A" in front of those statements which relate to acyanotic heart defects and a "C" in front of those statements relating to cyanotic heart defects.

_____a. Indicates very little or no cyanosis with oxygen saturation of more than eighty-five percent in the peripheral circulation

_____b. Can occur at atrial, ventricular, or aortic level and with a combination of defects

_____c. Indicates presence of noticeable cyanosis with oxygen saturation of less than eighty-five percent in the peripheral arterial circulation

_____d. Occurs in any heart defect where there is little or no mixing of oxygenated blood with unoxygenated blood

_____e. May be asymptomatic; may become more severe and disabling and require treatment during childhood or later

_____f. Occurs in any heart defect which allows unoxygenated blood from the right side of the heart to mix with oxygenated blood from the left side of the heart

8. List types of each class of heart defect.

a. Acyanotic

1)

2)

b. Cyanotic--

9. Discuss defects of the gastrointestinal system.

a. Cleft lip and/or palate

1) Description

2) Treatment

3) Preoperative nursing responsibilities

4) Postoperative nursing responsibilities

b. Other digestive tract abnormalities

10. Discuss defects of the musculoskeletal system.

a. Talipes

b. Congenital hip dislocation

11. Discuss hemolytic diseases.

a. ABO incompatibility

1) Symptoms

2) Treatment and nursing responsibilities

3) Prognosis--

b. Rh incompatibility or erythroblastosis fetalis

   1) Signs and symptoms

   2) Complications

   3) Treatment

   4) Nursing responsibilities

12. Discuss metabolism errors.

   a. Cretinism

      1) Characteristics

      2) Causes

3) Treatment

b. Phenylketonuria (PKU)

1) Characteristics

2) Diagnostic test

3) Treatment

13. Describe characteristics, treatment and nursing responsibilities, and prognosis for the newborn of a diabetic mother.

a. Characteristics

b. Treatment and nursing responsibilities

c. Prognosis--

14. Discuss intracranial hemorrhage.

a. Causes

b. Characteristics

1)

2)

3)

4)

5)

c. Treatment

d. Nursing responsibilities

e. Prognosis

15. Discuss common nerve injuries.

a. Facial paralysis

1) Incidence--

2) Characteristics

3) Treatment--

b. Paralysis of upper arm or Erb's palsy

1) Incidence--

2) Characteristics

3) Treatment

4) Nursing responsibilities

5) Prognosis--

16. Discuss the following infections as they affect the neonate.

a. Thrush

1) Cause

2) Symptom--

3) Treatment

4) Nursing responsibilities

b. Congenital syphilis

1) Cause--

2) Symptoms

a)

b)

c)

3) Complications

4) Nursing responsibilities

c. Epidemic diarrhea

  1) Causes

    a)

    b)

    c)

  2) Symptom--

  3) Treatment

  4) Prognosis--

  5) Nursing responsibilities

d. Rubella

  1) Cause--

  2) Characteristics

  3) Complications

  4) Treatment and prognosis--

e. Impetigo

  1) Causes

    a)

    b)

2) Symptom--

3) Treatment and nursing responsibilities

17. List three ways of providing emotional support to the parents of a neonate with an abnormality.

a.

b.

c.

CARING FOR THE NEWBORN WITH ABNORMALITIES
UNIT VIII

ANSWERS TO TEST

1. a. 3
   b. 8
   c. 6
   d. 12
   e. 9
   f. 11
   g. 1
   h. 5
   i. 7
   j. 2
   k. 10
   l. 4
   m. 16
   n. 14
   o. 17
   p. 15
   q. 13

2. a. Infections--Any four of the following:
      1) Ophthalmia neonatorum
      2) Thrush
      3) Congenital syphilis
      4) Epidemic diarrhea
      5) Congenital rubella
      6) Impetigo

   b. Congenital--Any five of the following:
      1) Chromosomal aberrations
      2) Central nervous system abnormalities
      3) Congenital heart defects
      4) Gastrointestinal malformations
      5) Musculoskeletal defects
      6) Hemolytic diseases
      7) Metabolism errors
      8) Diabetes in the mother

c. Birth injuries--Any two of the following:

   1) Intracranial hemorrhage

   2) Nerve injuries

   3) Fractures and dislocations

3. Discussion should include:

   a. Occurrence is approximately one in every six hundred births

   b. Down's syndrome or mongolism is the most common of the chromosomal aberrations

   c. Other types are Klinefelter's and Turner's syndromes in which the individual has an extra sex chromosome

4. Description should include:

   a. Characteristics

      1) Slanting eyes

      2) Flat nose

      3) Thick protruding tongue

      4) Short hands with deep horizontal crease in palm and incurving fifth finger

      5) Wide space between first and second toes

      6) Decreased muscle tone

      7) Short, broad neck and head

   b. Complications

      1) Heart or eye defects

      2) Retarded mental and physical development

      3) Poor resistance to infection

   c. Prognosis--Depending upon severity of other deformities and mental retardation, child may require institutionalization

   d. Nursing responsibilities

      1) Feed with care; due to lack of muscle tone the infant may have difficulty sucking and swallowing

   2) Provide audio and visual stimulation and extra personal attention to assist infant to develop to fullest potential

5. Description should include:

   a. Anencephaly

      1) Characteristics

         a) Scalp and cranium may be missing

         b) Top part of head is extremely small or appears to be absent

      2) Prognosis--No chance of survival

   b. Spina bifida

      1) Characteristics

         a) Imperfect closure or protrusion in the back somewhere along the spinal column; most common site is the lumbosacral area

         b) Defect may range in size from very small to very large and may leak spinal fluid

      2) Complications--Any three of the following:

         a) Hydrocephaly

         b) Urinary or fecal incontinence

         c) Loss of sensation or motor control below site

         d) Club feet (talipes equinovarus)

         e) Congenital hip dislocation

         f) Infection

      3) Treatment

         a) Surgical removal or repair of the defect

         b) Repair and/or rehabilitation of complications

      4) Prognosis

         a) Incidence of infection is high

         b) Child is usually paraplegic

         c) Much surgery and rehabilitation will be necessary if the child survives

5) Nursing responsibilities
    a) Position to prevent pressure on the protruding defect
    b) Change position frequently unless prescribed otherwise
    c) Cleanse perineum frequently and treat to minimize irritation due to incontinence
    d) Protect site aseptically to prevent infection when leaking occurs or following surgery
    e) Provide emotional support for the infant and parents

c. Hydrocephaly
  1) Causes
    a) Obstruction in the free circulation of cerebrospinal fluid
    b) Defective absorption of the cerebrospinal fluid
  2) Characteristics
    a) Symmetrical increase of head size; circumference 14.9 inches or 37.8 cm or more
    b) Varying degrees of mental retardation
    c) Retarded motor function
    d) Bulging of the fontanels
    e) Separation of the suture lines
    f) Shiny scalp with distended veins
    g) Strabismus
    h) *Setting sun* eyes
  3) Complications
    a) Size and weight of head increases
    b) Neck muscles become weak
    c) Infant becomes unable to move head
    d) Increasing intracranial pressure causes brain damage with symptoms such as irritability, vomiting, or convulsions
    e) Death may occur due to complications

4) Treatment--Surgical implantation of a shunt to drain the excess fluid into the right atrium

  a) When treated early enough, child may have only minimal brain damage

  b) Shunts may have to be replaced several times

  c) Complications following surgery may include septicemia or pulmonary thrombosis

5) Prognosis--Always guarded

6) Nursing responsibilities

  a) Change position frequently to prevent pressure areas or skin breakdown of bony prominences, head, and ears

  b) Always provide support for the head and neck

  c) Feed carefully and slowly

  d) Assist the infant to eruct by position change or backrub

  e) Measure head daily or as prescribed

  f) Provide emotional support by talking and singing to the infant, by audio and visual stimulation, and with toys that are lightweight and brightly colored

6. Discussion should include:

  a. Incidence

    1) Cause more infant deaths than any other anomaly

    2) May be slight enough to be asymptomatic and never detected

    3) May be surgically corrected in the majority of infants who survive

  b. Symptoms--Any five of the following:

    1) Cyanosis

    2) Dyspnea

    3) Tachycardia

    4) Feeding difficulties or choking spells

    5) Failure to gain weight or strength

    6) Fatigue

c. Treatment

  1) Medical to improve condition of child

  2) Surgical repair done in stages and usually delayed until preschool or school age

d. Prognosis--Usually favorable but depends upon the condition and size and age of the child

7. a. A

  b. C

  c. C

  d. A

  e. A

  f. C

8. a. Acyanotic--Any two of the following:

    1) Coarctation of the aorta

    2) Patent ductus arteriosus

    3) Atrial septal defect

    4) Ventricular septal defect

  b Cyanotic--Either of the following:

    1) Tetralogy of Fallot

    2) Transposition of the great vessels

9. Discussion should include:

  a. Cleft lip and/or palate

    1) Description--Failure of the maxillary and premaxillary processes to fuse during the fifth to eighth week of intrauterine life

    2) Treatment

      a. Surgical repair of lip very soon after birth

      b. Repair of palate usually after age of ten months

3) Preoperative nursing responsibilities

a) Allow more time than usual for feedings

b) Feed slowly with a soft-tipped syringe, rubber-tipped medicine dropper, Brecht feeder, or spoon

c) Hold infant in an upright position to facilitate swallowing

d) Assist infant to eruct frequently because the infant with a mouth deformity swallows more air than the average infant

e) Use restraints as prescribed to prevent infant from scratching the surgical site and to help infant become accustomed to them

4) Postoperative nursing responsibilities

a) Prevent infant from sucking or crying; these activities strain the suture line

b) Position carefully on side or back to avoid pressure on the operative site

c) Keep suture line clean

d) Use restraints to keep infant's hands away from the operative site

e) Hold and cuddle to provide for emotional needs

b. Other digestive tract abnormalities

1) Other abnormalities occur infrequently

2) Nursing responsibilities will depend upon the type of abnormality; many of these conditions will require immediate surgical repair

3) All infants should be observed closely for lack of function or symptoms of dysfunction

10. Discussion should include:

a. Talipes--Any one of a variety of deformities of the foot; most common foot deformity is talipes equinovarus or clubfoot

1) Characteristic--One or both feet are twisted out of shape or out of usual position

2) Treatment

a) Manipulation and exercise

b) Corrective shoes or other devices

c) Plaster cast on affected foot

d) Surgical correction

b. Congenital hip dislocation--Partial or complete displacement of the head of the femur from a malformed hip socket

1) Characteristics--Occurs more often in girls

a) Limited abduction of the hip joint

b) Asymmetry of the gluteal folds

2) Treatment

a) Manipulation of the femur into place followed by application of a splint or cast

b) Surgical correction if manipulation is delayed or unsuccessful

11. Discussion should include:

a. ABO incompatibility--Mild condition

1) Symptoms

a) Jaundice within first 48 hours after birth

b) Mild anemia

c) Negative or low Coombs' test

2) Treatment and nursing responsibilities

a) Exchange transfusion if bilirubin is high

b) Light therapy

3) Prognosis--Very good; recovery is usually spontaneous

b. Rh incompatibility or erythroblastosis fetalis--May be a mild to serious or fatal condition

1) Signs and symptoms

a) Yellow vernix caseosa

b) Anemia, present at birth or soon after

c) Jaundice within 24 hours after birth

d) Enlarged liver and spleen

e) Positive Coombs' test

f) Elevated bilirubinemia

g) Lethargy

h) Generalized weakness

2) Complications

a) Kernicterus

(1) Degeneration of central nervous tissue due to persistent high bilirubinemia

(2) Symptoms include extreme lethargy, opisthotonos, convulsions, and a shrill high-pitched cry

b) Hydrops fetalis

(1) Most severe form of erythroblastosis fetalis

(2) Symptoms include excessive edema, marked anemia, jaundice, and enlargement of the liver and spleen

(3) Affected infants are stillborn or live only a short time

3) Treatment

a) Tests usually from umbilical cord blood, including Coombs' test, serum bilirubin, Rh determination, and others

b) Exchange transfusions when indicated

4) Nursing responsibilities

a) Observe all neonates for jaundice; report to the physician immediately when jaundice occurs

b) Change position frequently to avoid atelectasis

c) Prevent secondary infection

d) Omit feedings as prescribed before transfusions

e) Observe carefully for signs of shock following transfusions

f) Observe fluid intake, oral and/or parenteral

12. Discussion should include:

   a. Cretinism

      1) Characteristics

         a) Large, protruding tongue

         b) Dry skin

         c) Coarse hair

         d) Protruding abdomen

         e) Obstinate constipation

         f) Poor muscle tone

         g) Depressed reflexes

         h) Hoarse cry

         i) Puffy eyes

         j) Umbilical hernia

      2) Causes

         a) Absence of the thyroid gland

         b) Defective production of thyroxin

         c) Maternal ingestion of medication which suppresses thyroid function

         d) Iodide deficiency

      3) Treatment

         a) Administration of a thyroid preparation is necessary throughout life

         b) Early treatment and adequate dosage permit fairly normal physical growth and mental development

   b. Phenylketonuria (PKU)

      1) Characteristics

         a) Liver enzyme necessary to change the essential amino acid phenylalanine to tyrosine is absent

         b) Phenylalanine builds up in the blood serum to as much as 20 times the normal level and when untreated causes severe mental retardation

2) Diagnostic test--Guthrie blood test

a) Blood is tested after the infant has received feedings for at least twenty-four hours, usually the third or fourth day after birth

b) Test is repeated in four or five weeks if positive

c) Oklahoma state law requires the performance of the test on all neonates

3) Treatment

a) Early recognition of the disease

b) Administration of low phenylalanine formula/diet as soon as the condition is diagnosed

13. Description should include:

a. Characteristics

1) Premature birth

2) Obese appearance with generalized edema

3) Greater urinary output and weight loss

4) Poor muscle tone

5) Listlessness

6) Respiratory distress due to hyaline membrane disease and atelectasis

b. Treatment and nursing responsibilities

1) Blood glucose determinations are usually done at birth and every two to four hours until glucose level is stable

2) Gastric secretions are usually increased and may require aspiration to prevent regurgitation

3) Respiratory secretions are also increased, necessitating frequent suctioning of the respiratory tract

4) Infant is placed in an incubator and treated as premature regardless of size

5) Feedings are usually withheld for 24 to 72 hours until the infant has lost much of the excess body fluid

6) If blood sugar is abnormally low, the physician may administer glucose intravenously

c. Prognosis--Good if the infant progresses well the first few days after birth

14. Discussion should include:

a. Causes

1) Birth trauma

2) Precipitate delivery

3) Hard, prolonged labor

4) Difficult delivery

5) Premature birth

b. Characteristics--Any five of the following:

1) Weak, shrill, or high-pitched cry

2) Poor reflexes

3) Thrashing movements of the extremities

4) Periods of apnea and cyanosis

5) Difficult respirations

6) Poor sucking reflex

7) Vomiting

8) Bulging or tense fontanels

9) Convulsions

c. Treatment

1) Cranial pressure may be relieved by spinal or dural taps

2) Elevation of the head of the bed helps reduce cerebral venous pressure

3) Anticonvulsive medication may be ordered

4) Vitamin K may be given to minimize bleeding

d. Nursing responsibilities

  1) Handle gently and as little as possible

  2) Avoid loud noises or jarring infant

  3) Keep infant in an incubator or isolette to provide a regulated atmosphere

  4) Withhold feedings until condition is stabilized

  5) Maintain close observation of vital signs and general behavior

e. Prognosis

  1) Death may result due to respiratory failure

  2) Survivors may be mentally retarded and have cerebral palsy, epilepsy, or behavior problems

  3) Recovery may be complete

  4) Prognosis depends upon the severity and location of the hemorrhage

15. Discussion should include:

a. Facial paralysis

  1) Incidence--Most common type

  2) Characteristics

    a) No movement in muscles on affected side

    b) Mouth pulls toward unaffected side

  3) Treatment--Recovery is spontaneous, usually without any residual damage

b. Paralysis of upper arm or Erb's palsy

  1) Incidence--Occurs during a difficult delivery when pressure is exerted on the arm

  2) Characteristics

    a) Arm does not move

    b) Muscles in affected arm are flaccid

3) Treatment

a) Positioning and support of the affected arm

b) Physical therapy

c) Surgery if nerve is severely damaged

4) Nursing responsibilities

a) Observe neonate for evidence of injury after difficult delivery

b) Move or turn infant carefully to prevent further injury

5) Prognosis--Good if nerves have not been severely damaged

16. Discussion should include:

a. Thrush

1) Cause--Fungus infection, Candida albicans

a) May be contracted during birth from an infected birth canal

b) May be transmitted by infected personnel who use poor aseptic technique

2) Symptom--White patches on the mucous membranes of the mouth that cannot be easily removed

3) Treatment

a) Antibiotics

b) Gentian violet solution to affected areas

4) Nursing responsibilities

a) Isolate the infant

b) Observe intake

c) Give water after feeding to aid in cleansing mouth

b. Congenital syphilis

1) Cause--Transfer of the spirochete Treponema pallidum through the placenta from an infected mother

2) Symptoms--Any three of the following:

a) Highly infectious skin lesions on face, palms, buttocks, or soles of the feet

b) Nasal discharge associated with sniffing sound on inspiration

            - c) Bleeding ulcerations on mucous membranes
            - d) Enlargement of liver, spleen, and lymph nodes
            - e) Tender joints
            - f) Positive serology
        - 3) Complications--Pathological changes in bones, eyes, and nervous system if not treated
        - 4) Nursing responsibilities
            - a) Isolate infant
            - b) Administer antibiotics as prescribed
    - c. Epidemic diarrhea
        - 1) Causes--Any three of the following:
            - a) Causative organisms--Staphylococci or E. coli
            - b) Overcrowding in the nursery
            - c) Poor personal hygiene of personnel or mothers
            - d) Poor aseptic technique
        - 2) Symptom--Sudden onset of watery, yellowish green stools
        - 3) Treatment
            - a) Antibiotics
            - b) Prevention of dehydration through intravenous infusion
        - 4) Prognosis--Mortality rate is high
        - 5) Nursing responsibilities
            - a) Isolate any suspected case immediately
            - b) Maintain proper aseptic technique
            - c) Isolate the infant of an unclean mother
            - d) Keep formula refrigerated
            - e) Maintain sterility of feeding equipment
            - f) Record intake and output
            - g) Provide special care of the buttocks

d. Rubella

  1) Cause--Maternal infection during the first trimester of pregnancy may result in one or more deformities

  2) Characteristics

    a) Rubella should be suspected in all cases of deformity

    b) Cultures of rubella virus may be obtained from pharyngeal secretions, urine, cerebrospinal fluid, and other secretions or tissues

  3) Complications

    a) Excretion of the virus for several months after birth even when no abnormalities are present can spread the infection to others

    b) The ears, heart, and eyes are most frequently affected

  4) Treatment and prognosis will depend upon the type and severity of the abnormality

e. Impetigo

  1) Causes--Any two of the following:

    a) Staphylococci or streptococci organisms

    b) Break in aseptic technique

    c) Contact with infected person

  2) Symptom--Blebs which are most likely to develop in folds, creases, and moist surfaces

  3) Treatment and nursing responsibilities

    a) Isolate the affected infant

    b) Maintain aseptic technique

    c) Remove crusts with soap and water

    d) Apply prescribed ointment

    e) Administer antibiotics as prescribed

    f) Prevent complications such as dehydration

17. Any three of the following:

    a. Allow time for parents to ask questions and express fears and feelings

    b. Permit them to assist with infant care as much as possible

    c. Instruct in any special aspects of infant care

    d. Report any specific concerns to the proper person

    e. Be aware of community agencies which offer assistance for children with unusual problems

INTRODUCTION TO NURSING OF CHILDREN
UNIT I

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to discuss the importance of studying growth and development and the influence of heredity and environment on growth and development. The student should be able to state theories of motor development and list stages of development and fundamentals of pediatric nursing. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with growth and development to the correct definitions.
2. Discuss the importance of studying growth and development.
3. Discuss hereditary and environmental influences on growth and development.
4. State the three theories of motor development.
5. List three principles of growth and development.
6. List the stages of development from birth to adulthood.
7. List five fundamentals of pediatric nursing.
8. Discuss the admission and care of the pediatric patient.

INTRODUCTION TO NURSING OF CHILDREN
UNIT I

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information sheet.

   C. Discuss terminal and specific objectives.

   D. Discuss information sheet.

   E. Tour pediatric unit.

   F. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Test

   D. Answers to test

II. References:

   A. Brigley, Catherine M. *Pediatrics for the Practical Nurse.* Albany, New York: Delmar Publishers, 1973.

   B. Broadribb, Violet, and Charlotte Corliss. *Maternal-Child Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

C. Brunner, Lillian S. et al. *Lippincott's Manual of Nursing Practice.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1974.

D. Ingalls, A. Joy, and M. Constance Salerno. *Maternal and Child Health Nursing.* St. Louis, Missouri: The C. V. Mosby Company, 1971

III. Other materials:

A. Films

1. "A Two-Year-Old Goes to the Hospital." New York University Film Library, 26 Washington Place, New York 10003.

2. "He Acts His Age." McGraw-Hill Films.

3. "Principles of Development." McGraw-Hill Films.

(NOTE: The above films are available to Oklahoma instructors from the Oklahoma State Department of Health.)

B. Filmstrips

1. "Normal Patterns of Development." Trainex Corporation.

2. "Admission and Orientation of the Child." Trainex Corporation.

3. "Stephen Goes to the Hospital." Trainex Corporation.

4. "Parents and Their Ill Child." Trainex Corporation.

5. "Preparing the Child for Procedures." Trainex Corporation.

6. "Medicating Children." Medical Electronic Education Services, Inc., 29423 West Six Mile Road, Livonia, Michigan 48152.

INTRODUCTION TO NURSING OF CHILDREN
UNIT I

INFORMATION SHEET

I. Terms and definitions

   A. Growth--Increase in size of an organism

   B. Development--Process of continual change from a lower or simpler state to a higher, more complex one

   C. Learning--Acquiring knowledge, skill, or understanding through experience and instruction

   D. Heredity--Transmission of traits from parents to child

   E. Pediatrics--Medical science relating to the growth and development of children and to the care, treatment, and prevention of diseases, injuries, and defects of children

   F. Environment--External conditions which surround, act upon, and influence an organism and its parts

   G. Personality--Behavior, attitudes, habits, and character traits of an individual

II. Importance of studying growth and development

   A. Gain knowledge of the physical, mental, emotional, and social changes in an individual from birth to old age

   B. Learn what abilities are considered average or normal for a child at a given age

   C. Consider the effects that illness and hospitalization may have on a child and the family

   D. Provide a basis for planning nursing care to meet the needs of a child at a given age or stage of development

III. Influences on growth and development

   A. Heredity--Genetic factors

      1. Inherited characteristics

         a. Skin color

         b. Eye color

INFORMATION SHEET

   c. Body build
   d. Blood type
   e. Sex determination
   f. Intelligence or mental capacity to learn
   g. Race
   h. Congenital anomalies
   i. Personality

2. Some inherited characteristics may be influenced or altered by environmental factors

   a. Skin color
   b. Intelligence potential
   c. Body size and shape
   d. Personality

3. Some inherited characteristics are not affected by environmental factors

   a. Blood type
   b. Eye color
   c. Race

B. Environmental influences

1. Home life

   a. Financial status
   b. Marital status of parents
   c. Number of persons in the family unit
   d. Education of parents
   e. Medical care available
   f. Religious practices
   g. Location of family unit
   h. Disease

INFORMATION SHEET

2. Proper food love, shelter, and protection increase the child's capacity to grow and develop

3. Great lack of one or more of the environmental needs will deter normal physical, mental, emotional, and social development

IV. Theories of motor development

A. Cephalocaudal--Development begins in the head region and moves downward to the feet

B. Proximodistal--Development proceeds from the center of the body toward the extremities

C. General to specific--Development of large muscle activity precedes development of fine muscle activity

V. Principles of growth and development

A. Occur in an orderly sequence

B. Continue from the moment of conception until maturity; rate varies

(NOTE: Growth is greatest during the prenatal period and is rapid during infancy. The rate tapers to slow, constant growth in middle childhood. During early adolescence the rate picks up and again tapers off in the latter part of adolescence.)

C. Differ from child to child while following a general pattern

D. Occur at varying rates in the body structures; some tissues and organs mature more rapidly than others

E. Involve the whole child

VI. Stages of development

A. Babyhood--Period of rapid growth

1. Neonate--Birth to one month

2. Infant--One month to one year

B. Childhood--Period of slow, steady growth

1. Toddler--One to three years

2. Preschool--Three to six years

3. School--Six to ten years

4. Preadolescence--Ten to twelve years

INFORMATION SHEET

C. Adolescence

1. Early--Twelve to sixteen years; period of rapid growth
2. Late--Sixteen to twenty years; period of decreasing growth and attainment of maximum height

VII. Fundamentals of pediatric nursing

A. Develop a nursing care plan based on personal assessment of the child and family relationship

B. Encourage parent participation

C. Assist the child as necessary while permitting independence

D. Explain all tests, procedures, and treatments to the child and/or parents using appropriate terminology

E. Provide facilities and opportunities for the child to play

F. Encourage the child to verbalize feelings and fears

G. Provide continuity of care by having one nurse per shift assigned to the same children each day

H. Maintain a calm, clean, and quiet environment

VIII. Admitting and caring for the pediatric patient

A. Greet the child by name in a friendly manner

B. Introduce child to others in the unit as appropriate

C. Orient child and parents to the unit and to the policies of the institution

D. Explain all procedures even though they are routine steps such as weighing, temperature, pulse, and respiration

E. Be truthful about procedures; if they will cause pain or discomfort, tell the child

F. Explain procedures or behavior through play activity or story telling using dolls or puppets

G. Permit the parents to participate in all procedures as much as possible

INFORMATION SHEET

H. Provide toys and playtime for all pediatric patients; television should not be the only diversion provided

I. Permit the patient to keep a favorite toy, blanket, or other object

J. Allow child out of bed to play and exercise unless contraindicated

K. Do not use bed rest, medications, treatments, or injections as forms of punishment

INTRODUCTION TO NURSING OF CHILDREN
UNIT I

TEST

1. Match the terms on the right to the correct definition.

_____a. Behavior, attitudes, habits, and character traits of an individual

_____b. External conditions which surround, act upon, and influence an organism and its parts

_____c. Process of continual change from a lower or simpler state to a higher, more complex one

_____d. Acquiring knowledge, skill, or understanding through experience and instruction

_____e. Increase in size of an organism

_____f. Medical science relating to the growth and development of children and to the care, treatment, and prevention of diseases, injuries, and defects of children

_____g. Transmission of traits from parents to child

1. Growth
2. Heredity
3. Personality
4. Development
5. Pediatrics
6. Learning
7. Environment

2. Discuss the importance of studying growth and development.

3. Discuss hereditary and environmental influences on growth and development.

4. State the three theories of motor development.

   a. Proximodistal--

   b. General to specific--

   c. Cephalocaudal--

5. List three principles of growth and development.

   a.

   b.

   c.

6. List the stages of development from birth to adulthood.

7. List five fundamentals of pediatric nursing.

   a.

   b.

   c.

   d.

   e.

8. Discuss the admission and care of the pediatric patient.

INTRODUCTION TO NURSING OF CHILDREN
UNIT I

ANSWERS TO TEST

1.
   a. 3
   b. 7
   c. 4
   d. 6
   e. 1
   f. 5
   g. 2

2. Discussion should include:
   a. Gain knowledge of the physical, mental, emotional, and social changes in an individual from birth to old age
   b. Learn what abilities are considered average or normal for a child at a given age
   c. Consider the effects that illness and hospitalization may have on a child and the family
   d. Provide a basis for planning nursing care to meet the needs of a child at a given age or stage of development

3. Discussion should include:
   a. Heredity--Genetic factors
      1) Inherited characteristics
         a) Skin color
         b) Eye color
         c) Body build
         d) Blood type
         e) Sex determination
         f) Intelligence or mental capacity to learn
         g) Race
         h) Congenital anomalies
         i) Personality

2) Some inherited characteristics may be influenced or altered by environmental factors

a) Skin color

b) Intelligence potential

c) Body size and shape

d) Personality

3) Some inherited characteristics are not affected by environmental factors

a) Blood type

b) Eye color

c) Race

b. Environmental influences

1) Home life

a) Financial status

b) Marital status of parents

c) Number of persons in the family unit

d) Education of parents

e) Medical care available

f) Religious practices

g) Location of family unit

h) Disease

2) Proper food, love, shelter, and protection increase the child's capacity to grow and develop

3) Great lack of one or more of the environmental needs will deter normal physical, mental, emotional, and social development

4. a. Proximodistal–Development proceeds from the center of the body toward the extremities

b. General to specific–Development of large muscle activity precedes development of fine muscle activity

c. Cephalocaudal–Development begins in the head region and moves downward to the feet

5. Any three of the following:
   - a. Occur in an orderly sequence
   - b. Continue from the moment of conception until maturity; rate varies
   - c. Differ from child to child while following a general pattern
   - d. Occur at varying rates in the body structures; some tissues and organs mature more rapidly than others
   - e. Involve the whole child

6. a. Babyhood--Period of rapid growth
      - 1) Neonate--Birth to one month
      - 2) Infant--One month to one year
   - b. Childhood--Period of slow, steady growth
      - 1) Toddler--One to three years
      - 2) Preschool--Three to six years
      - 3) School--Six to ten years
      - 4) Preadolescence--Ten to twelve years
   - c. Adolescence
      - 1) Early--Twelve to sixteen years; period of rapid growth
      - 2) Late--Sixteen to twenty years; period of decreasing growth and attainment of maximum height

7. Any five of the following:
   - a. Develop a nursing care plan based on personal assessment of the child and family relationship
   - b. Encourage parent participation
   - c. Assist the child as necessary while permitting independence
   - d. Explain all tests, procedures, and treatments to the child and/or parents using appropriate terminology
   - e. Provide facilities and opportunities for the child to play
   - f. Encourage the child to verbalize feelings and fears

g. Provide continuity of care by having one nurse per shift assigned to the same children each day

h. Maintain a calm, clean, and quiet environment

8. Discussion should include:

a. Greet the child by name in a friendly manner

b. Introduce child to others in the unit as appropriate

c. Orient child and parents to the unit and to the policies of the institution

d. Explain all procedures even though they are routine steps such as weighing, temperature, pulse, and respiration

e. Be truthful about procedures; if they will cause pain or discomfort, tell the child

f. Explain procedures or behavior through play activity or story telling using dolls or puppets

g. Permit the parents to participate in all procedures as much as possible

h. Provide toys and playtime for all pediatric patients; television should not be the only diversion provided

i. Permit the patient to keep a favorite toy, blanket, or other object

j. Allow child out of bed to play and exercise unless contraindicated

k. Do not use bed rest, medications, treatments, or injections as forms of punishment

GROWTH AND DEVELOPMENT OF THE INFANT
UNIT II

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to discuss the growth and development of infants, the importance of motor development, and the effects of illness and hospitalization on the infant. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with this unit to the correct definitions.
2. Discuss the general development of the infant.
3. Discuss the importance of motor development.
4. Discuss common effects of illness on infants and children.
5. Discuss caring for the hospitalized infant.
6. Discuss the growth and development of infants during each of the first eleven months.
7. Discuss the growth and development of the infant at one year.

GROWTH AND DEVELOPMENT OF THE INFANT
UNIT II

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide student with objective sheet.

   B. Provide student with information sheet.

   C. Discuss terminal and specific objectives.

   D. Discuss information sheet.

   E. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Test

   D. Answers to test

II. References:

   A. Brigley, Catherine M. *Pediatrics for the Practical Nurse.* Albany, New York: Delmar Publishers, 1973.

   B. Brisbane, Holly E. *The Developing Child.* Peoria, Illinois: Chas. A. Bennett Co., Inc., 1971.

C. Broadribb, Violet, and Charlotte Corliss. *Maternal-Child Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

D. Brunner, Lillian S. et al. *The Lippincott Manual of Nursing Practice.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1974.

E. Hurlock, Elizabeth B. *Child Development.* New York: McGraw-Hill Book Company, 1972.

F. Thompson, Eleanor D. *Pediatrics for Practical Nurses.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1970.

G. Thompson, Ella M., and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

III. Other materials:

A. Films

1. "Auditory Screening for Infants." National Medical Audiovisual Center, Atlanta, Georgia.

2. "Developmental Evaluation in Infancy." Ohio State University, 190 West Seventeenth Avenue, Columbus, Ohio 44223.

3. "Neurological Examination of the One-Year-Old." National Medical Audiovisual Center, Atlanta, Georgia.

(NOTE: The above films are available to Oklahoma instructors from the Oklahoma State Department of Health.)

B. Filmstrip--"Human Development Series: Birth to 2 1/2 Years." Concept Media.

C. Publication--Pierre the Pelican Series. Family Publications Center, P.O. Box 15690, New Orleans, Louisiana 70115.

GROWTH AND DEVELOPMENT OF THE INFANT
UNIT II

INFORMATION SHEET

I. Terms and definitions

   A. Maturation--Process of coming to full development

   B. Motor--Pertaining to any activity or behavior involving muscular movement

   C. Peer group--Association of persons of similar age

   D. Deciduous teeth--Primary teeth, twenty in number, which are replaced by permanent teeth; also called baby teeth

   E. Dentition--Process of teething

II. General development of the infant

   A. Growth

      1. Birth weight is doubled by the end of six months and tripled by the end of the first year

      2. Length at the end of the first year is one and one-half times the length at birth

   B. Oral stage

      1. The first year of life is the crucial time for the establishment of a sense of trust, a sense that develops when an infant has good experiences with people and things

      2. During various stages of growth, pleasure is derived not only from sucking but also from making noises, crying, chewing, and breathing

      3. The infant first receives satisfaction and expresses needs through the mouth; a pacifier may be used to satisfy the sucking instinct

      4. The infant who is fed by other than oral methods should receive added attention since the satisfaction gained from sucking is denied

   C. Emotional development

      1. Fulfillment of the infant's physical and emotional needs is essential to development

INFORMATION SHEET

2. The infant should be introduced to a variety of learning experiences
3. Warmth and affection or the lack of it is recognized at an early age
4. Holding, cuddling, and rocking the infant in addition to routine personal care is essential to optimum growth and development
5. Recent research has shown that infants and children can suffer physical and emotional injury from too vigorous activity such as being tossed in the air, shaken, or otherwise roughly handled
6. An emotionally deprived infant may seek emotional satisfaction from within by gagging self with fingers or tongue
7. Other symptoms of emotional stress are body rocking or rolling and head banging

D. Adverse influences on development

1. Illness
2. Abnormalities
3. Lack of attention
4. Rigid schedules
5. Inadequate visual and audio stimulation
6. Separation from home and family

III. Importance of motor development

A. Various motor performances such as reaching, grasping, and thumb opposition develop in a predictable sequence

B. Motor development depends on maturation and learning; therefore, voluntary coordinated action is learned only after the involved musculature has matured sufficiently

C. Trying to teach skilled movements before the nervous system and muscles are well developed is usually wasted effort and may be frustrating to the child

D. Motor development follows a predictable pattern; it proceeds from head to foot, from proximal to distal, and from general to specific

INFORMATION SHEET

E. The pattern of motor development occurs in predictable stages

Example: At three or four months an infant usually looks at an object but does not reach for it; a little later he reaches, then scoops it up into his palm, and finally picks it up in a grasping movement. At about nine months he has perfected the pincers grasp between thumb and finger and is able to use it in picking up small or large articles.

F. Individual differences such as sex, opportunity, general health, and amount of stimulation affect the rate of motor development

G. Later learning of motor skills depends upon how well the child has achieved the earlier skills

H. Motor development promotes good physical health, provides release for emotional stress, aids the child to achieve independence and to entertain self, and contributes to socialization

IV. Common effects of illness on infants and children

A. Physical growth and development

1. Short illnesses seldom have a permanent effect

2. Long, severe illnesses may stunt physical growth or cause metabolic disturbances

3. Most illnesses are accompanied by a temporary loss of weight

4. Muscles lose tone and strength due to inactivity during illness

5. Some illnesses such as rheumatic fever or polio may cause permanent damage

B. Emotional behavior

1. Illness always upsets homeostasis which makes the child irritable and more subject to distress or anxiety

2. Many children become accustomed to the special attention received during illness and become aggressive and demanding following recovery

3. Severe lack of love and mothering in institutional or home environment stunts emotional growth and capacity for social relationships

INFORMATION SHEET

C. Social behavior

1. Segregation from the peer group during a long illness prevents learning patterns of social behavior
2. Constant attention may cause the child to develop an unhealthy attitude concerning own importance
3. Lack of stimulation results in apathy

D. Physical ability and activity

1. Restriction of activity may be frustrating to the child
2. Prolonged absence from the peer group may hinder ability to compete successfully in games, sports, and other physical activity
3. Inability to compete successfully may further isolate the child from peers thereby increasing frustration and inability

E. Personality

1. Chronic or severe illnesses or injuries damage personality
2. Child may withdraw from social contacts because he/she feels different or inferior
3. Following extended or frequent illness the child may have difficulty relating with peers
4. Severe illnesses often cause dependency problems, fears, feelings of guilt, or negative social attitudes

V. Caring for the hospitalized infant

A. Because hospitalization cannot be explained to an infant, the best reassurance is the familiar presence of the mother throughout admission and stay

(NOTE: Permit the mother to undress the infant and perform or assist in performing the admission procedures.)

B. The mother should be encouraged to stay with the infant if this does not mean neglecting the rest of the family

(NOTE: In many instances it is necessary to consider the emotional needs of the mother as well as the infant. If being with the infant is important to the mother, as it usually is, she should be allowed to stay.)

INFORMATION SHEET

C. The very young infant has not learned to differentiate between mother and others and therefore will learn rather quickly to relate to another who offers loving care

D. The parents may feel they will not be permitted to share in the care of the infant; therefore, the nurse should ask them tactfully if they wish to hold or feed the child

(NOTE: Avoid making the mother or father feel guilty if they prefer not to participate in all phases of the infant's care. They may feel unsure of their ability to help successfully.)

E. Rocking, cuddling, and playing with an infant are essential parts of nursing care

F. Long-term illness and confinement may cause regression in motor and physical development; therefore, it is important for the nurse to provide the stimulation needed by the infant

G. Knowledge of the norms of development in infants and how to provide sensory stimulation aids the nurse in planning the nursing care of a particular infant

H. One nurse on each shift should be responsible for the infant's care

(NOTE: In most cases of infant hospitalization it will be advantageous for one nurse to give the major portion of the infant's care on a continuing basis. This affords a one-to-one relationship for the infant and minimizes the discontinuity which is experienced in the institutional setting.)

VI. Growth and development of infants

A. One month

1. Physical development

a. Regains weight lost after birth; grows one inch

b. Lifts and turns head but lacks complete control

c. Clenches fists

d. Watches bright lights or light-colored objects

INFORMATION SHEET

2. Social development
    a. Cries when hungry or uncomfortable; stops crying when comfortable or satisfied
    b. Makes small, throaty noises
    c. Sleeps eighteen to twenty hours per day
3. Care and guidance
    a. Diet
        1) Breast feedings or formula every three or four hours
        2) Vitamins A, D, and C daily; orange juice may be given to provide vitamin C
        3) Plain, boiled water between feedings
        4) Bubbled well after each feeding
        5) Two a.m. feeding on demand
    b. Sleep
        1) Use firm mattress and no pillow under head
        2) Place on abdomen or side after feeding
    c. Activity
        1) Permit freedom to exercise at intervals
        2) Provide audio stimulation by smiling and talking during care
        3) Support infant's head and back
        4) Attend to physical needs promptly
        5) Observe frequently
        6) Hold, touch, fondle, and caress
        7) Hold during feedings

INFORMATION SHEET

B. Two months

1. Physical development
    a. Posterior fontanel closes
    b. Holds head erect
    c. Follows moving objects with eyes
    d. Holds an object briefly
    e. Moves arms and legs vigorously
    f. Sheds tears when crying
2. Social development
    a. Smiles at familiar person
    b. Stops crying when picked up
    c. Begins making purposeful movements
    d. Enjoys being with others
3. Care and guidance
    a. Diet
        1) Offer solid foods, usually baby cereals and strained fruits, in small semiliquid feedings
        2) Offer new foods one at a time when infant is hungry
        3) Place foods well back on tongue
    b. Sleep
        1) Begins to develop individual pattern
        2) May be awake for longer periods
        3) May still awaken for 2 a.m. feeding
    c. Activity
        1) Provide safe, flat surface for exercise
        2) Hang bright-colored pictures or toys in range of vision
        3) Place infant where activities of others can be observed

INFORMATION SHEET

- d. Medical care
  - 1) Physical examination
  - 2) First DPT, an inoculation against diphtheria, pertussis, and tetanus
  - 3) Trivalent OPV, oral polio vaccine

    (NOTE: This may not be given until later.)

C. Three months

1. Physical development
   - a. Holds weight on arms in prone position
   - b. Discovers hands
   - c. Follows objects from side to side and up and down
   - d. Supports head well
   - e. Turns from abdomen to back
2. Social development
   - a. Cries less
   - b. Smiles readily
   - c. Enjoys having people talk
   - d. Desires companionship
3. Care and guidance
   - a. Diet
     - 1) Takes larger amounts of solid foods gradually
     - 2) Should receive bland green and yellow vegetables and strained meats
     - 3) Discontinues 2 a.m. feeding
   - b. Sleep
     - 1) Sleeps all night
     - 2) Naps at frequent, short intervals

INFORMATION SHEET

- c. Activity
    - 1) Place infant in semi-sitting position as in an infant seat

      (NOTE: Be sure infant seat is secure to prevent infant from tipping it over.)
    - 2) Place infant in prone position in crib or on floor
    - 3) Place toys or mobiles where the infant may see them
- d. Medical care--Second DPT

D. Four months

- 1. Physical development
    - a. Drooling indicates appearance of saliva
    - b. Lifts head and shoulders well in prone position
    - c. Turns from back to side or abdomen
    - d. Sits with support
    - e. Reaches for objects
    - f. Begins coordination between eye and body movements
    - g. Begins to drink from cup or glass
- 2. Social development
    - a. Coos, chuckles, gurgles, blows bubbles
    - b. Laughs aloud
    - c. Performs for others
    - d. Enjoys social play
- 3. Care and guidance
    - a. Diet
        - 1) Add cooked egg yolk
        - 2) Add new foods gradually

INFORMATION SHEET

3) May discontinue sterilization of bottles and formula

4) May observe infant's preference for certain foods

b. Sleep

1) Sleeps through ordinary noises

2) Moves about more during sleep

c. Activity

1) Place rattles or dangling toys within reach

2) Bathe in infant tub to permit child to splash water

3) Place soft toys in crib

4) Place infant near mirror

d. Medical care

1) Third DPT

2) Second trivalent OPV

E. Five months

1. Physical development

a. Doubles birth weight

b. Sits well with support

c. Grasps objects

d. Puts everything into mouth

2. Social development

a. Talks to self or toys

b. Recognizes whether people are familiar or unfamiliar

c. Discovers feet

d. Bounces and bears weight when held in standing position

e. Plays alone contentedly but has sudden, short-lived reaction to frustrations such as dropping a toy or having mother leave

INFORMATION SHEET

3. Care and guidance
    a. Diet
        1) Add custard, gelatin desserts, and other simple puddings
        2) Permit infant to hold bottle
    b. Sleep
        1) Sleeps through 10 p.m. feeding
        2) Naps two or three times during the day
    c. Activity
        1) Provide smooth or soft toys; avoid loose buttons or eyes and rough or sharp edges
        2) Place infant in playpen for short periods to provide space in which to move around

F. Six months
    1. Physical development
        a. Sits alone for a short period of time
        b. Turns completely over
        c. Bangs table with rattle or other toys
        d. Pulls self to sitting position
    2. Social development
        a. Cries loudly when displeased
        b. Notices activity and nearby objects
        c. Bubbles and squeals
        d. Sucks food from a spoon
        e. Laughs aloud frequently
        f. Enjoys splashing about in water
        g. Likes company and attention

INFORMATION SHEET

3. Care and guidance
   a. Diet
      1) Include cereal, egg yolk, and a variety of fruits, meat, and vegetables
      2) Place infant in high chair for feedings
      3) Give milk or other beverage in cup at mealtime
      4) Continue bottle feedings at nap and bedtime
   b. Sleep
      1) Place alone in room to sleep
      2) Provide for naps even though infant may object
   c. Activity
      1) Place infant in bounce seat or activity table
      2) Provide large nesting or stacking toys
      3) Play peek-a-boo and pat-a-cake
      4) Permit infant to be up in chair or playpen while awake and put in crib for naps and sleep
   d. Medical care--Third trivalent OPV

G. Seven months
   1. Physical development
      a. Begins dentition with two lower teeth, the central incisors which are the first of the deciduous teeth
      b. Begins to crawl
      c. Increases motor skills
      d. Enjoys active play such as being bounced on someone's knee
   2. Social development
      a. Becomes aware of strangers
      b. May show a preference for one family member
      c. Shifts moods easily from crying to laughing

INFORMATION SHEET

3. Care and guidance
    a. Diet
        1) Increase amounts of foods gradually
        2) Add finger foods such as toast
        3) May note decrease of appetite when teething begins
    b. Sleep
        1) Sleeps 11 to 13 hours at night
        2) May be fretful and restless due to discomfort of teething
    c. Activity
        1) Permit active exercise either on floor or in a playpen
        2) Provide two or three toys at a time, exchanging them occasionally to add variety
        3) Avoid overwhelming infant with too many toys
        4) Provide firm toys for chewing as teeth begin to appear

H. Eight months
    1. Physical development
        a. Changes position easily from lying to sitting to crawling
        b. Increases use of finger and thumb pincer action
        c. Enjoys dropping toys from play area to be retrieved by another
        d. Plays for extended periods alone
    2. Social development
        a. Prefers being with others
        b. Expresses impatience, especially when hungry
        c. Initiates play such as pat-a-cake for attention

INFORMATION SHEET

3. Care and guidance
    a. Diet
        1) Continue to add new foods slowly
        2) Offer baked potato, macaroni, and cottage cheese
    b. Sleep
        1) Continues to sleep 11 to 12 hours at night
        2) Takes two naps a day
        3) Is active and wakeful for longer periods
    c. Activity
        1) Enjoys jump chair or walker
        2) Rides in stroller
        3) Prefers noisy rattles or squeak toys
    d. Safety
        1) Protect from crawling or falling out of bed, down the stairs, or in the tub
        2) Protect from chewing on soiled or painted objects

I. Nine months
1. Physical development
    a. Shows preference for one hand
    b. Holds bottle
    c. Crawls well
    d. Responds enthusiastically to attention
2. Social development
    a. Tries to imitate sounds
    b. Babbles in conversational manner
    c. Cries if scolded
    d. Tries to feed self

INFORMATION SHEET

3. Care and guidance
    - a. Diet
        - 1) Offer chopped and mashed table foods
        - 2) Permit infant to feed self finger foods
        - 3) Use unbreakable dishes
    - b. Sleep
        - 1) May object to bedtime
        - 2) May fall asleep while sitting in high chair or stroller
    - c. Activity
        - 1) Provide sufficient room for creeping and exploring
        - 2) Help to learn through new experiences
        - 3) Avoid hazards or harmful situations

          (NOTE: The exploring child will pull things down or try to pull self up. Protect from hazards Avoid excessive reprimands.)

J. Ten months

1. Physical development
    - a. Pulls to a standing position
    - b. Throws toys and expects them to be returned
    - c. Walks around playpen or furniture
    - d. Learns new activities quickly
2. Social development
    - a. Responds to own name
    - b. Enjoys feeding self with fingers
    - c. Plays simple games
    - d. Observes activity of others and tries to imitate

INFORMATION SHEET

3. Care and guidance
    a. Diet
        1) Takes solid foods well
        2) Tries to hold own cup or glass
    b. Sleep
        1) Provide for a quiet time before bedtime
        2) May cry out in sleep without awakening
        3) Use pajamas with feet to keep warm; infant is active during sleep and gets uncovered frequently
    c. Activity
        1) Select clothing that is loose enough to permit freedom of movement
        2) Assist with walking
        3) Protect from accidents because infant will move about quickly and is curious about everything

K. Eleven months
1. Physical development
    a. Walks holding onto furniture or another person with one hand
    b. Coordinates activities increasingly well
2. Social development
    a. Understands simple directions
    b. Becomes impatient when held or confined
    c. Enjoys playing with food and eating utensils
    d. Becomes increasingly curious

INFORMATION SHEET

3. Care and guidance
    a. Diet
        1) Still spills when using a cup
        2) Blows bubbles when trying to drink
        3) Becomes more adept at eating
    b. Sleep
        1) May take shorter naps
        2) Awakens eager to begin the day's activities
    c. Activity
        1) Moves around well
        2) Initiates own activities
        3) Requires supervision to prevent injuries
    d. Safety
        1) Cover electrical outlets
        2) Place household cleaners, medications, and any harmful substances out of reach
        3) Provide for rest or quiet play at intervals to avoid overtiring

VII. One-year-old child

A. Physical development

1. Pulse 100 to 140; respirations 20 to 40
2. Birth weight is tripled; height approximately 30 inches
3. Stands alone for short periods
4. Walks several steps before falling
5. May assist in dressing
6. Has six teeth, four above and two below

INFORMATION SHEET

B. Social development

1. Understands much that is said and can say several words
2. Repeats behavior that receives approval or disapproval
3. Recognizes "No! No!"
4. Repeats many words when prompted
5. Shows emotions such as fear, anger, and jealousy
6. Reacts to mood of adults or siblings
7. Plays with food

C. Care and guidance

1. Diet
    a. Add egg white and fish
    b. Expect decreased appetite and/or interest in food with increasing activity and interest in environment
2. Sleep
    a. May take only one nap daily
    b. Requires 11 to 12 hours sleep at night
3. Activity
    a. Provide time for walking or playing out-of-doors with supervision
    b. Substitute a desirable activity for an undesirable one
    c. Provide simple household items as extra toys for play
    d. Permit child to attempt new activities
    e. Provide opportunity for the child to be with adults other than the parents for short periods of time

GROWTH AND DEVELOPMENT OF THE INFANT
UNIT II

TEST

1. Match the terms on the right to the correct definition.

______a. Pertaining to any activity or behavior involving muscular movement

______b. Primary teeth, twenty in number, which are replaced by permanent teeth; also called baby teeth

______c. Association of persons of similar age

______d. Process of coming to full development

______e. Process of teething

1. Peer group
2. Deciduous teeth
3. Motor
4. Maturation
5. Dentition

2. Discuss the general development of the infant.

3. Discuss the importance of motor development.

4. Discuss common effects of illness on infants and children.

   a. Physical growth and development

   b. Emotional behavior

   c. Social behavior

   d. Physical ability and activity

   e. Personality

5. Discuss caring for the hospitalized infant.

6. Discuss the growth and development of infants during each of the first eleven months.

   a. One month

      1) Physical development

      2) Social development

3) Care and guidance

a) Diet

b) Sleep

c) Activity

b. Two months

1) Physical development

2) Social development

3) Care and guidance

a) Diet

b) Sleep

c) Activity

d) Medical care

c. Three months

1) Physical development

2) Social development

3) Care and guidance

a) Diet

b) Sleep

c) Activity

d) Medical care

d. Four months

1) Physical development

2) Social development

3) Care and guidance

a) Diet

b) Sleep

c) Activity

d) Medical care

e. Five months

1) Physical development

2) Social development

3) Care and guidance

a) Diet

b) Sleep

c) Activity

f. Six months

1) Physical development

2) Social development

3) Care and guidance

a) Diet

b) Sleep

c) Activity

d) Medical care

g. Seven months

1) Physical development

2) Social development

3) Care and guidance

a) Diet

b) Sleep

c) Activity

h. Eight months

1) Physical development

2) Social development

3) Care and guidance

a) Diet

b) Sleep

c) Activity

d) Safety

i. Nine months

1) Physical development

2) Social development

3) Care and guidance

a) Diet

b) Sleep

c) Activity

j. Ten months

1) Physical development

2) Social development

3) Care and guidance

   a) Diet

   b) Sleep

   c) Activity

k. Eleven months

   1) Physical development

   2) Social development

3) Care and guidance

a) Diet

b) Sleep

c) Activity

d) Safety

7. Discuss the growth and development of the infant at one year.

a. Physical development

b. Social development

c. Care and guidance
   1) Diet

   2) Sleep

   3) Activity

GROWTH AND DEVELOPMENT OF THE INFANT
UNIT II

ANSWERS TO TEST

1.	a. 3	d. 4
	b. 2	e. 5
	c. 1	

2. Discussion should include:

   a. Growth

      1) Birth weight is doubled by the end of six months and tripled by the end of the first year

      2) Length at the end of the first year is one and one-half times the length at birth

   b. Oral stage

      1) The first year of life is the crucial time for the establishment of a sense of trust, a sense that develops when an infant has good experiences with people and things

      2) During various stages of growth, pleasure is derived not only from sucking but also from making noises, crying, chewing, and breathing

      3) The infant first receives satisfaction and expresses needs through the mouth; a pacifier may be used to satisfy the sucking instinct

      4) The infant who is fed by other than oral methods should receive added attention since the satisfaction gained from sucking is denied

   c. Emotional development

      1) Fulfillment of the infant's physical and emotional needs is essential to development

      2) The infant should be introduced to a variety of learning experiences

      3) Warmth and affection or the lack of it is recognized at an early age

4) Holding, cuddling, and rocking the infant in addition to routine personal care is essential to optimum growth and development

5) Recent research has shown that infants and children can suffer physical and emotional injury from too vigorous activity such as being tossed in the air, shaken, or otherwise roughly handled

6) An emotionally deprived infant may seek emotional satisfaction from within by gagging self with fingers or tongue

7) Other symptoms of emotional stress are body rocking or rolling and head banging

d. Adverse influences on development

1) Illness

2) Abnormalities

3) Lack of attention

4) Rigid schedules

5) Inadequate visual and audio stimulation

6) Separation from home and family

3. Discussion should include:

a. Various motor performances such as reaching, grasping, and thumb opposition develop in a predictable sequence

b. Motor development depends on maturation and learning; therefore, voluntary coordinated action is learned only after the involved musculature has matured sufficiently

c. Trying to teach skilled movements before the nervous system and muscles are well developed is usually wasted effort and may be frustrating to the child

d. Motor development follows a predictable pattern; it proceeds from head to foot, from proximal to distal, and from general to specific

e. The pattern of motor development occurs in predictable stages

f. Individual differences such as sex, opportunity, general health, and amount of stimulation affect the rate of motor development

g. Later learning of motor skills depends upon how well the child has achieved the earlier skills

h. Motor development promotes good physical health, provides release for emotional stress, aids the child to achieve independence and to entertain self, and contributes to socialization

4. Discussion should include:

   a. Physical growth and development

      1) Short illnesses seldom have a permanent effect

      2) Long, severe illnesses may stunt physical growth or cause metabolic disturbances

      3) Most illnesses are accompanied by a temporary loss of weight

      4) Muscles lose tone and strength due to inactivity during illness

      5) Some illnesses such as rheumatic fever or polio may cause permanent damage

   b. Emotional behavior

      1) Illness always upsets homeostasis which makes the child irritable and more subject to distress or anxiety

      2) Many children become accustomed to the special attention received during illness and become aggressive and demanding following recovery

      3) Severe lack of love and mothering in institutional or home environment stunts emotional growth and capacity for social relationships

   c. Social behavior

      1) Segregation from the peer group during a long illness prevents learning patterns of social behavior

      2) Constant attention may cause the child to develop an unhealthy attitude concerning own importance

      3) Lack of stimulation results in apathy

   d. Physical ability and activity

      1) Restriction of activity may be frustrating to the child

      2) Prolonged absence from the peer group may hinder ability to compete successfully in games, sports, and other physical activity

3) Inability to compete successfully may further isolate the child from peers thereby increasing frustration and inability

e. Personality

1) Chronic or severe illnesses or injuries damage personality

2) Child may withdraw from social contaets because he/she feels different or inferior

3) Following extended or frequent illness the child may have difficulty relating with peers

4) Severe illnesses often cause dependency problems, fears, feelings of guilt, or negative social attitudes

5. Discussion should include:

a. Because hospitalization cannot be explained to an infant, the best reassurance is the familiar presence of the mother throughout admission and stay

b. The mother should be encouraged to stay with the infant if this does not mean neglecting the rest of the family

c. The very young infant has not learned to differentiate between mother and others and therefore will learn rather quickly to relate to another who offers loving care

d. The parents may feel they will not be permitted to share in the care of the infant; therefore, the nurse should ask them tactfully if they wish to hold or feed the child

e. Rocking, cuddling, and playing with an infant are essential parts of nursing care

f. Long-term illness and confinement may cause regression in motor and physical development; therefore, it is important for the nurse to provide the stimulation needed by the infant

g. Knowledge of the norms of development in infants and how to provide sensory stimulation aids the nurse in planning the nursing care of a particular infant

h. One nurse on each shift should be responsible for the infant's care

6. Discussion should include:

a. One month

1) Physical development

a) Regains weight lost after birth; grows one inch

b) Lifts and turns head but lacks complete control

  - c) Clenches fists
  - d) Watches bright lights or light-colored objects

2) Social development
  - a) Cries when hungry or uncomfortable; stops crying when comfortable or satisfied
  - b) Makes small, throaty noises
  - c) Sleeps eighteen to twenty hours per day

3) Care and guidance
  - a) Diet
    - (1) Breast feedings or formula every three or four hours
    - (2) Vitamins A, D, and C daily; orange juice may be given to provide vitamin C
    - (3) Plain, boiled water between feedings
    - (4) Bubbled well after each feeding
    - (5) Two a.m. feeding on demand
  - b) Sleep
    - (1) Use firm mattress and no pillow under head
    - (2) Place on abdomen or side after feeding
  - c) Activity
    - (1) Permit freedom to exercise at intervals
    - (2) Provide audio stimulation by smiling and talking during care
    - (3) Support infant's head and back
    - (4) Attend to physical needs promptly
    - (5) Observe frequently
    - (6) Hold, touch, fondle, and caress
    - (7) Hold during feedings

b. Two months

1) Physical development

a) Posterior fontanel closes

b) Holds head erect

c) Follows moving objects with eyes

d) Holds an object briefly

e) Moves arms and legs vigorously

f) Sheds tears when crying

2) Social development

a) Smiles at familiar person

b) Stops crying when picked up

c) Begins making purposeful movements

d) Enjoys being with others

3) Care and guidance

a) Diet

(1) Offer solid foods, usually baby cereals and strained fruits, in small semiliquid feedings

(2) Offer new foods one at a time when infant is hungry

(3) Place foods well back on tongue

b) Sleep

(1) Begins to develop individual pattern

(2) May be awake for longer periods

(3) May still awaken for 2 a.m. feeding

c) Activity

(1) Provide safe, flat surface for exercise

(2) Hang bright-colored pictures or toys in range of vision

(3) Place infant where activities of others can be observed

- d) Medical care
  - (1) Physical examination
  - (2) First DPT, an inoculation against diphtheria, pertussis, and tetanus
  - (3) Trivalent OPV, oral polio vaccine

c. Three months

- 1) Physical development
  - a) Holds weight on arms in prone position
  - b) Discovers hands
  - c) Follows objects from side to side and up and down
  - d) Supports head well
  - e) Turns from abdomen to back
- 2) Social development
  - a) Cries less
  - b) Smiles readily
  - c) Enjoys having people talk
  - d) Desires companionship
- 3) Care and guidance
  - a) Diet
    - (1) Takes larger amounts of solid foods gradually
    - (2) Should receive bland green and yellow vegetables and strained meats
    - (3) Discontinues 2 a.m. feeding
  - b) Sleep
    - (1) Sleeps all night
    - (2) Naps at frequent, short intervals

c) Activity

(1) Place infant in semi-sitting postion as in an infant seat

(2) Place infant in prone position in crib or on floor

(3) Place toys or mobiles where the infant may see them

d) Medical care--Second DPT

d. Four months

1) Physical development

a) Drooling indicates appearance of saliva

b) Lifts head and shoulders well in prone position

c) Turns from back to side or abdomen

d) Sits with support

e) Reaches for objects

f) Begins coordination between eye and body movements

g) Begins to drink from cup or glass

2) Social development

a) Coos, chuckles, gurgles, blows bubbles

b) Laughs aloud

c) Performs for others

d) Enjoys social play

3) Care and guidance

a) Diet

(1) Add cooked egg yolk

(2) Add new foods gradually

(3) May discontinue sterilization of bottles and formula

(4) May observe infant's preference for certain foods

b) Sleep

  (1) Sleeps through ordinary noises

  (2) Moves about more during sleep

c) Activity

  (1) Place rattles or dangling toys within reach

  (2) Baths in infant tub to permit child to splash water

  (3) Place soft toys in crib

  (4) Place infant near mirror

d) Medical care

  (1) Third DPT

  (2) Second trivalent OPV

e. Five months

1) Physical development

  a) Doubles birth weight

  b) Sits well with support

  c) Grasps objects

  d) Puts everything into mouth

2) Social development

  a) Talks to self or toys

  b) Recognizes whether people are familiar or unfamiliar

  c) Discovers feet

  d) Bounces and bears weight when held in standing position

  e) Plays alone contentedly but has sudden short-lived reaction to frustrations such as dropping a toy or having mother leave

3) Care and guidance

  a) Diet

    (1) Add custard, gelatin desserts, and other simple puddings

    (2) Permit infant to hold bottle

b) Sleep

(1) Sleeps through 10 p.m. feeding

(2) Naps two or three times during the day

c) Activity

(1) Provide smooth or soft toys; avoid loose buttons or eyes and rough or sharp edges

(2) Place infant in playpen for short periods to provide space in which to move around

f. Six months

1) Physical development

a) Sits alone for a short period of time

b) Turns completely over

c) Bangs table with rattle or other toys

d) Pulls self to sitting position

2) Social development

a) Cries loudly when displeased

b) Notices activity and nearby objects

c) Babbles and squeals

d) Sucks food from a spoon

e) Laughs aloud frequently

f) Enjoys splashing about in water

g) Likes company and attention

3) Care and guidance

a) Diet

(1) Include cereal, egg yolk, and a variety of fruits, meat, and vegetables

(2) Place infant in high chair for feedings

(3) Give milk or other beverage in cup at mealtime

(4) Continue bottle feedings at nap and bedtime

- b) Sleep
    - (1) Place alone in room to sleep
    - (2) Provide for naps even though infant may object
- c) Activity
    - (1) Place infant in bounce seat or activity table
    - (2) Provide large nesting or stacking toys
    - (3) Play peek-a-boo and pat-a-cake
    - (4) Permit infant to be up in chair or playpen while awake and put in crib for naps and sleep
- d) Medical care--Third trivalent OPV

g. Seven months

- 1) Physical development
    - a) Begins dentition with two lower teeth, the central incisors which are the first of the deciduous teeth
    - b) Begins to crawl
    - c) Increases motor skills
    - d) Enjoys active play such as being bounced on someone's knee
- 2) Social development
    - a) Becomes aware of strangers
    - b) May show a preference for one family member
    - c) Shifts moods easily from crying to laughing
- 3) Care and guidance
    - a) Diet
        - (1) Increase amounts of foods gradually
        - (2) Add finger foods such as toast
        - (3) May note decrease of appetite when teething begins

b) Sleep

(1) Sleeps 11 to 13 hours at night

(2) May be fretful and restless due to discomfort of teething

c) Activity

(1) Permit active exercise either on floor or in a playpen

(2) Provide two or three toys at a time, exchanging them occasionally to add variety

(3) Avoid overwhelming infant with too many toys

(4) Provide firm toys for chewing as teeth begin to appear

h. Eight months

1) Physical development

a) Changes position easily from lying to sitting to crawling

b) Increases use of finger and thumb pincer action

c) Enjoys dropping toys from play area to be retrieved by another

d) Plays for extended periods alone

2) Social development

a) Prefers being with others

b) Expresses impatience, especially when hungry

c) Initiates play such as pat-a-cake for attention

3) Care and guidance

a) Diet

(1) Continue to add new foods slowly

(2) Offer baked potato, macaroni, and cottage cheese

b) Sleep

  (1) Continues to sleep 11 to 12 hours at night

  (2) Takes two naps a day

  (3) Is active and wakeful for longer periods

c) Activity

  (1) Enjoys jump chair or walker

  (2) Rides in stroller

  (3) Prefers noisy rattles or squeak toys

d) Safety

  (1) Protect from crawling or falling out of bed, down the stairs, or in the tub

  (2) Protect from chewing on soiled or painted objects

i. Nine months

1) Physical development

  a) Shows preference for one hand

  b) Holds bottle

  c) Crawls well

  d) Responds enthusiastically to attention

2) Social development

  a) Tries to imitate sounds

  b) Babbles in conversational manner

  c) Cries if scolded

  d) Tries to feed self

3) Care and guidance

  a) Diet

    (1) Offer chopped and mashed table foods

(2) Permit infant to feed self finger foods

(3) Use unbreakable dishes

b) Sleep

(1) May object to bedtime

(2) May fall asleep while sitting in high chair or stroller

c) Activity

(1) Provide sufficient room for creeping and exploring

(2) Help to learn through new experiences

(3) Avoid hazards or harmful situations

j. Ten months

1) Physical development

a) Pulls to a standing position

b) Throws toys and expects them to be returned

c) Walks around playpen or furniture

d) Learns new activities quickly

2) Social development

a) Responds to own name

b) Enjoys feeding self with fingers

c) Plays simple games

d) Observes activity of others and tries to imitate

3) Care and guidance

a. Diet

(1) Takes solid foods well

(2) Tries to hold own cup or glass

b) Sleep

(1) Provide for a quiet time before bedtime

- (2) May cry out in sleep without awakening
- (3) Use pajamas with feet to keep warm; infant is active during sleep and gets uncovered frequently

c) Activity

- (1) Select clothing that is loose enough to permit freedom of movement
- (2) Assist with walking
- (3) Protect from accidents because infant will move about quickly and is curious about everything

k. Eleven months

1) Physical development

- a) Walks holding onto furniture or another person with one hand
- b) Coordinates activities increasingly well

2) Social development

- a) Understands simple directions
- b) Becomes impatient when held or confined
- c) Enjoys playing with food and eating utensils
- d) Becomes increasingly curious

3) Care and guidance

a) Diet

- (1) Still spills when using a cup
- (2) Blows bubbles when trying to drink
- (3) Becomes more adept at eating

b) Sleep

- (1) May take shorter naps
- (2) Awakens eager to begin the day's activities

- c) Activity
    - (1) Moves around well
    - (2) Initiates own activities
    - (3) Requires supervision to prevent injuries
- d) Safety
    - (1) Cover electrical outlets
    - (2) Place household cleaners, medications, and any harmful substances out of reach
    - (3) Provide for rest or quiet play at intervals to avoid overtiring

7. Discussion should include:

- a. Physical development
    - 1) Pulse 100 to 140; respirations 20 to 40
    - 2) Birth weight is tripled; height approximately 30 inches
    - 3) Stands alone for short periods
    - 4) Walks several steps before falling
    - 5) May assist in dressing
    - 6) Has six teeth, four above and two below
- b. Social development
    - 1) Understands much that is said and can say several words
    - 2) Repeats behavior that receives approval or disapproval
    - 3) Recognizes "No! No!"
    - 4) Repeats many words when prompted
    - 5) Shows emotions such as fear, anger, and jealousy
    - 6) Reacts to mood of adults or siblings
    - 7) Plays with food

c. Care and guidance

1) Diet

a) Add egg white and fish

b) Expect decreased appetite and/or interest in food with increasing activity and interest in environment

2) Sleep

a) May take only one nap daily

b) Requires 11 to 12 hours sleep at night

3) Activity

a) Provide time for walking or playing out-of-doors with supervision

b) Substitute a desirable activity for an undesirable one

c) Provide simple household items as extra toys for play

d) Permit child to attempt new activities

e) Provide opportunity for the child to be with adults other than the parents for short periods of time

CARING FOR THE HOSPITALIZED INFANT
UNIT III

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to discuss etiology, symptoms, treatment, and nursing responsibilities of various diseases and conditions encountered in the hospitalized infant. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with this unit to the correct definitions.
2. Discuss the etiology, symptoms, complications, treatment, and nursing responsibilities for these conditions related to inadequate nutrition: iron deficiency anemia, protein malnutrition, rickets, and scurvy.
3. Discuss the following conditions involving the gastrointestinal tract: epidemic diarrhea, constipation, colic, vomiting and regurgitation, intussusception, pyloric stenosis, congenital aganglionic megacolon, inguinal or femoral hernia, hydrocele, and umbilical hernia.
4. Discuss the conditions affecting the respiratory system including acute nasopharyngitis and otitis media.
5. Discuss etiology, symptoms, complications, treatment, and nursing responsibilities in infantile eczema.
6. Discuss etiology, incidence, basic facts, and reaction and reassurance of the parents concerning sudden infant death syndrome.

CARING FOR THE HOSPITALIZED INFANT
UNIT III

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information sheet.

   C. Discuss terminal and specific objectives.

   D. Discuss information sheet.

   E. Demonstrate the types of restraints used for infants in the health care facility.

   F. Provide current periodicals which contain articles pertaining to research and/or recent findings concerning diseases and conditions affecting infants.

   G. Obtain information and/or publications concerning SIDS from The National Foundation for Sudden Infant Death, Inc.; 1501 Broadway; New York, New York 10036.

   H. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Prepare short reports concerning recent developments in the treatment of diseases discussed in this unit as time permits.

   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Test

   D. Answers to test

II. References:

A. Baker, Katherine R., and Xenia F. Fane. *Understanding and Guiding Young Children.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1971.

B. Brigley, Catherine M. *Pediatrics for the Practical Nurse.* Albany, New York: Delmar Publishers, 1973.

C. Broadribb, Violet, and Charlotte Corliss. *Maternal-Child Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

D. Hurlock, Elizabeth B. *Child Development.* New York: McGraw-Hill Book Company, 1972.

E. Ingalls, A. Joy, and M. Constance Salerno. *Maternal and Child Health Nursing.* St. Louis, Missouri: The C. V. Mosby Company, 1971.

F. Thompson, Eleanor D. *Pediatrics for Practical Nurses.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1970.

III. Other materials:

A. Film--"Cleared for Hearing." Public Health Service, National Medical Audiovisual Center Annex, Atlanta, Georgia 30334.

B. Periodicals

1. Rundels, J. C. "Iron Deficiency Children." *Nursing Care,* September 1973.
2. Ambrosio, Annabell. "The Types of Croup and How to Treat Them." *Nursing Care,* February 1974.
3. Ambrosio, Annabell. "The Child Health Conference." *Nursing Care,* May 1975.
4. Posey, Ruth A. "Creative Nursing Care of Babies with Heart Disease." *Nursing 74*, October.
5. Warren, Freda M. "Blood Pressure Readings: Getting Them Quickly on an Infant." *Nursing 75,* April.
6. Livesey, Ruth Perry. "Diapering for Good Skin Care." *The Journal of Practical Nursing,* August 1973.

C. Pamphlet--*Facts About Sudden Infant Death Syndrome.* National Foundation for Sudden Infant Death, 1501 Broadway, New York, New York 10036.

CARING FOR THE HOSPITALIZED INFANT
UNIT III

INFORMATION SHEET

I. Terms and definitions

A. Occult--Hidden; concealed; not visible on gross examination

B. Kwashiorkor--Disease of infants and young children which occurs soon after weaning and is due to a deficient quantity and quality of protein in the diet

(NOTE: The name originated in Ghana, a country in Africa.)

C. Enteritis--Any inflammation of the intestinal tract, especially of the mucosa

D. Colic--Acute spasmodic abdominal pain occurring in early infancy

E. Intussusception--Telescoping of one portion of the intestine into another, most frequently at the junction of the ileum and ascending colon

F. Pyloric stenosis--Obstruction, usually congenital, of the pyloric orifice of the stomach caused by hypertrophy of the pyloric muscle

G. Projectile vomiting--Form of vomiting in which the stomach contents are suddenly and forcefully expelled, usually without nausea

H. Antispasmodic--Agent that relieves or prevents spasmodic pains

I. Anastomosis--Intercommunication between blood vessels or between two parts of the same organ as between two parts of the intestine

J. Water intoxication--Cramps, dizziness, headache, vomiting, convulsions, and coma produced by excessive administration of water or hypotonic solutions or by water retention

K. Inguinal--Pertaining to the groin

L. Hernia--Protrusion of an organ or a part through the wall of the cavity which normally contains it

M. Herniorrhaphy--Surgical repair of a hernia

N. Reducible hernia--Hernia whose contents can be manually replaced through the hernial opening

O. Irreducible hernia--Hernia that cannot be returned through the opening by manipulation

INFORMATION SHEET

P. Incarcerated hernia--Irreducible hernia frequently due to adhesions of the omentum to the hernia sac

(NOTE: The omentum is a fold of the peritoneum connecting abdominal viscera with the stomach.)

Q. Strangulated hernia--Hernia involving intestine in which circulation of the blood and the fecal current are blocked

R. Hydrocele--Collection of fluid in the outermost covering of the testes

S. Truss--Mechanical apparatus to prevent the recurrence of a hernial protrusion which has been reduced

T. Otitis media--Inflammation of the middle ear

U. Myringotomy--Incision of the tympanic membrane for the drainage of fluid or pus

V. Eczema--Acute or chronic, noncontagious, itching, inflammatory disease of the skin

II. Conditions related to inadequate nutrition

A. Iron deficiency anemia

1. Etiology

a. Inadequate diet

b. Excess intake of milk without adequate supplement

(NOTE: This condition may be called *milk anemia*.)

c. Occult blood loss due to lesions in the gastrointestinal tract such as peptic ulcer

d. Worm infestation

2. Symptoms

a. Pallor

b. Irritability

c. Anorexia

d. Decreased activity

e. Usually occurs after age of nine months

INFORMATION SHEET

3. Complications
    a. Heart murmur
    b. Enlarged spleen
    c. Weakened heart muscle
    d. Heart failure
4. Treatment--Iron preparations orally or intramuscularly

    (NOTE: Intramuscular iron preparations should be given by the Z-tract technique; oral preparations should be given with dropper or straw to prevent damage to teeth.)
5. Nursing responsibilities
    a. Provide proper diet including organ meats such as liver, egg yolk, legumes, green leafy vegetables, yellow fruits, whole grain and enriched cereals and bread, potatoes, tomatoes, molasses, and cooked dried fruits
    b. Instruct the mother in the importance of iron in the diet, providing a list of iron-rich foods
    c. Inform mother that the infant's stools will be dark or black while taking iron preparations orally
    d. Reduce intake of milk, which is iron-poor, and encourage infant to take other foods

B. Protein malnutrition (Kwashiorkor)

1. Etiology--Severe deficiency of protein in the diet
2. Symptoms
    a. Occurs from four months to five years in children who have been weaned
    b. Slow growth rate
    c. Muscles weak and atrophic
    d. Distended abdomen
    e. Generalized edema

INFORMATION SHEET

   - f. Gastrointestinal symptoms such as anorexia, vomiting, or diarrhea
   - g. Hair thin, dry, and bleached
   - h. Apathy

3. Complications
   - a. Retarded physical and mental development
   - b. Secondary infections
   - c. High mortality rate
4. Treatment--Mainly preventive by adequate diet
5. Nursing responsibilities
   - a. Provide adequate diet
   - b. Encourage food intake
   - c. Instruct parents concerning an adequate diet and its importance
   - d. Be aware of community agencies which may assist financially deprived families

C. Rickets

1. Etiology--Deficiency of vitamin D
2. Symptoms
   - a. Craniotabes--Softening of the occipital bones
   - b. Delayed closure of the fontanels
   - c. Delayed dentition
   - d. Defective teeth
   - e. Musculoskeletal abnormalities including thoracic deformities, softening of the long bones, and muscular weakness
3. Complications
   - a. Tetany
   - b. Pneumonia
   - c. Enteritis

INFORMATION SHEET

4. Treatment
    a. Formula or milk which has been fortified with vitamin D
    b. Supplemental vitamin D for breast-fed infants
5. Nursing responsibilities
    a. Encourage infant to eat, using special equipment or techniques as indicated
    b. Provide emotional support to infant and parents
    c. Instruct parents in principles and importance of nutrition
    d. Observe intake and output
    e. Feed smaller amounts more often to increase total intake

D. Scurvy

1. Etiology--Deficiency of vitamin C
2. Symptoms
    a. Irritability
    b. Loss of appetite
    c. Digestive disturbances
    d. Tenderness in the legs
    e. Frog position with hips and knees semiflexed and feet rotated outward
    f. Red, swollen gums that bleed easily
3. Complications
    a. Hemorrhage in tissues or at the ends of long bones
    b. Exhaustion
    c. Death

INFORMATION SHEET

4. Treatment
    a. Adequate diet
    b. Daily therapeutic doses of vitamin C

III. Conditions involving the gastrointestinal tract

A. Epidemic diarrhea

1. Etiology
    a. Contaminated food and/or water
    b. Allergic reaction to food
    c. Overfeeding or underfeeding
    d. Poorly balanced diet
2. Symptoms
    a. Mild diarrhea
        1) Loose stools, four or more per day
        2) Irritability
        3) Anorexia
        4) Minimal vomiting, distention, or dehydration
    b. Severe diarrhea
        1) Marked dehydration
        2) Loss of tissue turgor
        3) Sunken fontanel
        4) Weak, rapid pulse
        5) Greenish, watery stools
        6) Rectal excoriation
        7) Forceful defecation
        8) Persistent vomiting
        9) Fever
        10) Extreme prostration

INFORMATION SHEET

3. Prognosis--May be fatal unless treatment is begun quickly and is effective

4. Treatment

   a. Laboratory tests to determine fluid and electrolyte balance

   b. Fluids and/or electrolyte solutions as indicated

   c. Change or discontinuation of oral intake

5. Nursing responsibilities

   a. Administer fluids as prescribed; may be one of the following

      1) Oral feedings of glucose solution

      2) Other preparations in place of milk

      3) Omission of any oral intake

      4) Skim milk or diluted skim milk

      5) Parenteral fluids

   b. Maintain intake and output

      1) Correct speed and amount of IV fluid

      2) Oral intake

      3) Number and character of defecations

      4) Amount and character of vomitus and urine

   c. Observe infant's activity and skin condition

   d. Take temperature as indicated

   e. Maintain isolation technique unless prescribed otherwise

      (NOTE: Because of the seriousness of infectious diarrhea in infants, the child with moderate or severe diarrhea is isolated until it is proven definitely that no infectious organism is involved.)

   f. Reduce fever by using tepid sponges or cooling mattress

INFORMATION SHEET

g. Prevent excoriation of the skin in the genital area
    1) Cleanse frequently and apply mineral oil, vaseline, or mild ointment
    2) Leave diaper off to expose affected skin to the air

h. Provide mouth care frequently; apply cream or ointment to lips

i. Provide emotional support
    1) Permit the mother to participate in care
    2) Hold and rock the infant when possible
    3) Soothe the infant by touching, stroking, and talking
    4) Provide pacifier to satisfy sucking needs while oral fluids are limited or discontinued
    5) Remain with the child as much as possible

B. Constipation

1. Etiology
    a. Breast-fed infants--Seldom occurs
    b. Formula-fed infants
        1) Too little carbohydrate in formula
        2) Insufficient fluid intake
    c. Idiopathic megacolon--Hypertrophy and dilatation of the colon
    d. Mechanical obstruction or obstruction due to physical condition

2. Symptoms
    a. Hard, dry, small stools
    b. Irregular, infrequent defecation

(NOTE: Constipation is determined more by the character of the stool than by the frequency. Breast-fed infants may go several days without a movement and still not be constipated.)

INFORMATION SHEET

3. Treatment
    a. Increased amount of sugar in formula
    b. Increased intake of fruits and/or juices in diet
    c. Laxatives or enemas
4. Nursing responsibilities
    a. Adjust diet as prescribed
    b. Increase fluid intake
    c. Observe character of stools
    d. Give laxatives or enemas as prescribed

C. Colic

1. Etiology
    a. Exact cause unknown
    b. May be due to swallowed air or emotional tension
2. Symptoms
    a. Usually occur in latter part of day and the evening
    b. Loud, continuous crying
    c. Tense, distended abdomen
    d. Legs drawn up to abdomen; fists clenched
    e. Sleep restless and intermittent
3. Nursing responsibilities
    a. Check to see if infant needs to eruct (burp)
    b. Apply warmth to abdomen
    c. Administer rectal glycerine suppository for expulsion of flatus as prescribed
    d. Comfort infant by holding and rocking
    e. Administer antispasmodic or sedation such as phenobarbital as prescribed

INFORMATION SHEET

D. Vomiting and regurgitation

1. Etiology

   a. Overfeeding

   b. Air swallowing

   c. Allergic reaction

   d. Infection

   e. Organic obstruction

   f. Pyloric stenosis

2. Symptom--Spitting up of feedings in small or large amounts

   (NOTE: Some active, well-nourished infants tend to regurgitate rather easily but the tendency diminishes as they grow older. If emesis is large, frequent, or forceful a more serious condition should be suspected.)

3. Nursing responsibilities

   a. Observe amount, frequency, and characteristics of emesis or regurgitation

   b. Hold bottle during feedings so infant swallows little or no air

   c. Feed infant more slowly

   d. Burp frequently

   e. Avoid strenuous activity just before and after feedings

   f. Prevent infant from crying long and hard before feedings

   g. Provide emotional satisfaction by holding and cuddling

E. Intussusception

1. Etiology--Unknown

   (NOTE: It usually appears in infants between the ages of four to ten months and may be influenced by the unusual motility of the cecum and ilium present in the young infant.)

INFORMATION SHEET

2. Symptoms

   a. Intermittent incidents of colicky pain with sudden pallor, sharp cry, and flexing of legs onto abdomen

   b. Spasm may last fifteen to twenty minutes followed by period when infant seems normal

   c. Vomiting becomes progressively severe

   d. Infant strains with each spasm of pain until all feces is expelled; rectal discharge then consists of blood and mucus and is given the name of *currant jelly* stools

   e. Symptoms of shock occur quickly including rapid pulse, pallor, and diaphoresis

   f. Occurs more often in boys between the ages of four to ten months

3. Treatment

   a. Diagnosis is made through rectal examination, palpation of the abdomen, and barium enema with sedation as necessary before the procedures

   b. Occasionally the barium enema will reduce the intussusception

   c. Surgery within a few hours is essential

4. Nursing responsibilities

   a. Preoperative

      1) NPO

      2) Check vital signs frequently

      3) Monitor IV fluids

      4) Observe closely for additional distress

      5) Place in lateral position to lessen danger of aspiration

      6) Reassure the parents including explanation of the procedures being performed

INFORMATION SHEET

b. Postoperative

  1) Monitor IV fluids

  (NOTE: IV fluids are administered until normal bowel sounds are heard.)

  2) Resume oral feedings cautiously

  3) Keep surgical area clean and dry

  4) Observe accurate intake and output

  5) Monitor and measure gastric suction when used

  6) Turn frequently

  7) Suction mouth and nose as indicated

  8) Stimulate crying as needed to encourage deep breathing

  (NOTE: Deep breathing in infants can only be stimulated by making the infant cry.)

  9) Reassure parents and explain procedures

5. Prognosis

  a. Good when reduced spontaneously or surgically within twelve to twenty-four hours

  b. Poor to fatal if treatment is delayed or not given

F. Pyloric stenosis

  1. Etiology--Unknown

  2. Symptoms

    a. First few weeks appear uneventful

    b. Vomiting begins occasionally after feedings

    (NOTE: Vomiting occurs as early as the second or third week after birth.)

    c. Vomiting episodes gradually increase in frequency and force, becoming projectile in character

INFORMATION SHEET

   d. Vomitus may contain mucus and be blood-tinged but will never contain bile

   e. Weight loss and dehydration occur rapidly

   f. Urine becomes scanty; stools decrease

   g. Gastric peristaltic waves passing from left to right may be observed in the upper abdomen

3. Treatment

   a. Careful observation to prevent dehydration

   b. Adjustment of formula, usually to make it thicker and easier to retain

   c. Prescribing an antispasmodic, such as atropine, to aid in the passage of food through the pylorus

   d. Surgical correction for severe obstruction or when other treatment is unsuccessful

4. Nursing responsibilities

   a. Preoperative

      1) Monitor administration of IV fluids

      2) Administer medications before feedings or as prescribed to relax muscular spasm

      3) Observe accurate intake and output

      4) Note physical appearance including skin turgor

      5) Burp the infant before feeding as well as during and after feeding

      6) Feed infant slowly

      7) Handle infant gently and as little as possible, particularly after feedings

      8) Place infant on abdomen or right side after feedings to aid passage of food from stomach into the intestine

      9) Elevate head of bed slightly

INFORMATION SHEET

10) Record time, type, and amount of feeding taken and retained and type and amount of emesis

11) Change position frequently

b. Postoperative

1) Place in lateral position to prevent aspiration of emesis or mucus

2) Monitor administration of IV fluids and vital signs

3) Observe for bleeding and/or shock

4) Change position gently

5) Hold infant for feedings

6) Begin giving glucose water as prescribed, usually about six hours postoperatively

7) Gradually add formula to feedings as tolerated

8) Observe intake and output, including emesis

5. Prognosis

a. Good if diagnosed and treated early

b. Recovery is usually rapid and dramatic

c. Surgery is about 99 percent successful

G. Congenital aganglionic megacolon or Hirschsprung's disease

1. Etiology--Congenital absence of ganglion cells within the muscular wall of the distal colon and rectum

2. Symptoms

(NOTE: Symptoms may occur in neonatal period but more often are not recognized until late infancy or early childhood.)

a. Neonate

1) No passage of meconium

2) Bile-stained emesis

3) Generalized abdominal distention

INFORMATION SHEET

b. Older infants

1) Obstinate severe constipation
2) Stools ribbonlike or in hard pellets
3) Formed stools possible only following enemas
4) Rectum usually empty with impaction of feces higher in the colon
5) Enlarged, hard abdomen
6) General debility
7) Anemia

3. Treatment

a. Colostomy to relieve the obstruction

b. Resection of the narrowed portion with anastomosis of the remainder of the colon to the anal opening

4. Nursing responsibilities

a. Preoperative

1) Administer oil retention enemas followed by colonic irrigation as prescribed
2) Change position frequently
3) Elevate head and upper body to decrease pressure on diaphragm
4) Observe intake and output
5) Keep skin clean and dry
6) Always use isotonic saline solution for enemas or colonic irrigations

(CAUTION: When tap water or soap solution is used for enemas or colonic irrigations, the water may be absorbed into the tissues causing water intoxication. Syncope, shock, and frequently death may result after just one or two tap water irrigations.)

INFORMATION SHEET

b. Postoperative

1) Observe closely

2) Monitor vital signs; take axillary temperature

3) Monitor nasogastric tube and IV infusions

4) Observe for rectal bleeding, abdominal distention, or an elevation in pulse or respiration

5) Observe intake and output

5. Prognosis--Successful surgery allows the child to grow and develop normally

H. Inguinal or femoral hernia

1. Etiology--Incomplete closure of the inguinal or femoral canal

(NOTE: During the embryonic life of the male, the testes push through the muscles and connective tissues of the abdominal wall carrying with them the blood vessels and other structures that later form the spermatic cord. This passageway is called the *inguinal canal*. The femoral canal lies behind the inguinal canal and forms a passageway for the femoral artery and vein. Inguinal hernias are more common in males while femoral hernias are more common in females.)

2. Symptoms

a. Mass in the inguinal or femoral area which is more prominent when the infant cries or strains

b. Irritability, fretfulness, and/or constipation

c. Vomiting and severe abdominal pain if strangulation occurs

3. Treatment

a. Various mechanical braces or trusses are available to maintain the intestine within the abdomen

b. In recent years the success of surgical repair has made surgery the preferred treatment

INFORMATION SHEET

4. Nursing responsibilities--Postoperative care
    a. Keep wound clean
    b. Monitor vital signs
    c. Observe intake and output; note first voiding after surgery
    d. Hold infant for feedings
    e. Change position frequently
5. Prognosis--Good

I. Hydrocele
    1. Etiology
        a. Congenital
        b. Secondary to herniorrhaphy
        c. Secondary to infection, injury, or trauma
    2. Symptoms
        a. Swelling of the scrotum
        b. Translucent appearance of skin of the scrotum
    3. Treatment--None unless complications are present

J. Umbilical hernia
    1. Etiology--Imperfect closure or weakness of the umbilical ring
    2. Symptom--Soft swelling of the umbilicus which becomes more prominent when the infant cries
    3. Treatment
        a. Small hernias usually disappear during the first year of life and require no special treatment
        b. Large hernias and the rare incarcerated hernia require surgery

INFORMATION SHEET

4. Nursing responsibilities
    a. Keep umbilicus clean
    b. Preoperative and postoperative care as indicated if surgery is performed

IV. Conditions affecting the respiratory system

A. Acute nasopharyngitis; coryza; common cold; rhinitis

1. Etiology--Viral infection involving the nasal cavity
2. Symptoms
    a. Fever
        1) May reach 102° to 104°F (38.9° to 40°C) in infants over three months
        2) Infants under three months usually afebrile
    b. Frequent sneezing
    c. Irritability and restlessness
    d. Interference with breathing and nursing due to congested nasal passages
    e. Vomiting
    f. Diarrhea

    (NOTE: Similar nasopharyngeal symptoms may be the first symptoms of some of the contagious childhood diseases such as measles.)
3. Complications--Infections involving the ear, mastoid, throat, or lungs
4. Treatment
    a. Nose drops
    b. Tepid sponge bath
    c. Antipyretics
    d. Increased humidity to thin secretions

INFORMATION SHEET

5. Nursing responsibilities
    - a. Provide for rest, fluids, and proper diet
    - b. Observe vital signs; report temperature elevation
    - c. Administer nose drops ten to fifteen minutes before feeding

      (NOTE: A bottle of nose drops should be used by only one person and discarded after its use is discontinued because the solution is easily contaminated.)
    - d. Protect upper lip with an application of lotion or petroleum jelly if nasal discharge is profuse
    - e. Isolate the infant

      (NOTE: Infants under six months of age can acquire this infection quite easily; therefore, all infants and small children should be protected from infected persons.)
    - f. Change position frequently
    - g. Discard soiled tissues in a safe manner

B. Otitis media
1. Etiology--Secondary to another infection such as
    - a. Throat infection
    - b. Upper respiratory infection
    - c. Scarlet fever
    - d. Measles
2. Symptoms
    - a. Pain evidenced by irritability, restlessness, and crying
    - b. Fever
    - c. Rubbing head or pulling at ear; lying on unaffected side
    - d. Vomiting
    - e. Purulent drainage if the typanic membrane ruptures

INFORMATION SHEET

3. Complications
    a. Deafness
    b. Mastoiditis
    c. Chronic otitis media
    d. Meningitis
4. Treatment
    a. Antibiotics and analgesics
    b. Myringotomy
5. Nursing responsibilities
    a. Emotional and physical support as indicated
    b. Keep outer ear clean
    c. Use ear wicks if drainage is present

        (NOTE: Ear wicks are made of sterile gauze and inserted carefully and loosely into the outer canal; change wicks frequently.)

    d. Place infant on affected side to aid drainage
    e. Instill ear drops as prescribed

        (NOTE: Pull the pinna of the ear down and back when instilling drops in an infant's ear.)

V. Infantile eczema
  A. Etiology
    1. Exact cause unknown
    2. May be due to
      a. Inherited tendency
      b. Emotional disturbance
      c. Allergens

INFORMATION SHEET

B. Symptoms

1. Usually occur between the age of three months and two years
2. Begins with reddening of the skin followed by the formation of vesicles which weep and form crusts
3. Becomes more severe in winter
4. May have periods of remission
5. Accompanied by intense itching, irritability, and inability to sleep

C. Complications

1. Secondary infections such as impetigo
2. Scarring
3. Increased susceptibility to other skin diseases

D. Treatment

1. Determination of possible causes by skin testing for sensitivity
2. Elimination diet to rule out offending foods beginning with a basic diet of hypoallergenic foods
3. Ointments or solutions to relieve itching
4. Emollient baths using oatmeal, cornstarch, or baking soda
5. Corticosteroids
6. Antibiotics for secondary infections
7. Postponement of immunizations, particularly smallpox

E. Nursing responsibilities

1. Isolate to protect from additional infections
2. Observe response to treatment
3. Restrain infant to prevent scratching and scarring
    a. Remove restraints at frequent intervals to permit movement and exercise
    b. Check fingers and hands frequently to be sure circulation is adequate

INFORMATION SHEET

4. Provide emotional support
    a. Provide audio and visual stimulation
    b. Hold the infant, especially for feedings
    c. Permit parents to assist in care and feeding
5. Instruct parents in care

VI. Sudden infant death syndrome

a. Etiology
    1. *Sudden infant death syndrome, SIDS,* or *crib death* are terms applied to any sudden, unexpected, and unexplained death of an infant
    2. Postmortem examination fails to show cause of death

B. Incidence
    1. May be as high as one out of every 350 babies
    2. Causes more deaths in infants after first week of life than any other condition
    3. Usually occurs between ages of three weeks and seven months

C. Basic facts
    1. It is a definite disease
    2. It cannot be predicted or prevented
    3. There is no evidence that these deaths are caused by aspiration, suffocation, infection, pain, or neglect
    4. Sudden death syndrome occurs in healthy infants
    5. There is no evidence that it is a hereditary condition
    6. There is no suffering; death occurs within seconds, usually during sleep
    7. Despite increased attention received in recent years, the incidence of SIDS is not rising; it seems to have occurred since Old Testament times

INFORMATION SHEET

D. Reaction and reassurance of the parents

1. After the initial shock of the infant's death, parents may experience extreme depression
2. Grief reactions of husband and wife may differ; one may blame the other
3. Either or both may have difficulty sleeping or experience other physical symptoms
4. They may experience extreme concern for other children or be irritable and impatient with them
5. Siblings may feel guilt or apprehension because of the infant's death or parents' reactions
6. The parents and siblings need a great deal of emotional support and reassurance
7. A national organization of parents of sudden death infants has been formed with chapters throughout the country; the purpose of the organization is to assist parents, educate the community about SIDS, and promote SIDS research

   (NOTE: The National Foundation for Sudden Infant Death, Inc. is located at 1501 Broadway, New York, New York, 10036.)

CARING FOR THE HOSPITALIZED
UNIT III

TEST

1. Match the terms on the right to the correct definition. (Answers to "a" through "k" are on this page.)

_____a. Cramps, dizziness, headache, vomiting, convulsions, and coma produced by excessive administration of water or hypotonic solutions or by water retention

_____b. Hernia whose contents can be manually replaced through the hernial opening

_____c. Pertaining to the groin

_____d. Disease of infants and young children which occurs soon after weaning and is due to a deficient quantity and quality of protein in the diet

_____e. Acute spasmodic abdominal pain occurring in early infancy

_____f. Intercommunication between blood vessels or between two parts of the same organ as between two parts of the intestine

_____g. Hernia that cannot be returned through the opening by manipulation

_____h. Any inflammation of the intestinal tract, especially of the mucosa

_____i. Inflammation of the middle ear

_____j. Mechanical apparatus to prevent the recurrence of a hernial protrusion which nas been reduced

_____k. Irreducible hernia frequently due to adhesions of the omentum to the hernia sac

1. Incarcerated hernia
2. Anastomosis
3. Water intoxication
4. Enteritis
5. Inguinal
6. Truss
7. Irreducible hernia
8. Otitis media
9. Colic
10. Reducible hernia
11. Kwashiorkor

(Answers to "l" through "v" are on this page.)

______l. Agent that relieves or prevents spasmodic pains

______m. Form of vomiting in which the stomach contents are suddenly and forcefully expelled, usually without nausea

______n. Surgical repair of a hernia

______o. Telescoping of one portion of the intestine into another, most frequently at the junction of the ileum and ascending colon

______p. Incision of the tympanic membrane for the drainage of fluid or pus

______q. Obstruction, usually congenital, of the pyloric orifice of the stomach caused by hypertrophy of the pyloric muscle

______r. Protrusion of an organ or a part through the wall of the cavity which normally contains it

______s. Hidden; concealed; not visible on gross examination

______t. Collection of fluid in the outermost covering of the testes

______u. Acute or chronic, noncontagious, itching, inflammatory disease of the skin

______v. Hernia involving intestine in which circulation of the blood and the fecal current are blocked

12. Pyloric stenosis
13. Hydrocele
14. Herniorrhaphy
15. Antispasmodic
16. Occult
17. Strangulated hernia
18. Myringotomy
19. Intussusception
20. Projectile vomiting
21. Hernia
22. Eczema

2. Discuss conditions related to inadequate nutrition.
   a. Iron deficiency anemia
      1) Etiology
      2) Symptoms
      3) Complications
      4) Treatment
      5) Nursing responsibilities
   b. Protein malnutrition (Kwashiorkor)
      1) Etiology

2) Symptoms

3) Complications

4) Treatment

5) Nursing responsibilities

c. Rickets

1) Etiology

2) Symptoms

3) Complications

4) Treatment

5) Nursing responsibilities

d. Scurvy

1) Etiology

2) Symptoms

3) Complications

4) Treatment

3. Discuss conditions involving the gastrointestinal tract.

a. Epidemic diarrhea

1) Etiology

2) Symptoms

   a) Mild diarrhea

   b) Severe diarrhea

3) Prognosis

4) Treatment

5) Nursing responsibilities

b. Constipation

1) Etiology

2) Symptoms

3) Treatment

4) Nursing responsibilities

c. Colic

1) Etiology

2) Symptoms

3) Nursing responsibilities

d. Vomiting and regurgitation

   1) Etiology

   2) Symptoms

   3) Nursing responsibilities

e. Intussusception

   1) Etiology

   2) Symptoms

   3) Treatment

4) Nursing responsibilities

   a) Preoperative

   b) Postoperative

5) Prognosis

f. Pyloric stenosis

   1) Etiology

   2) Symptoms

   3) Treatment

4) Nursing responsibilities

   a) Preoperative

   b) Postoperative

5) Prognosis

g. Congenital aganglionic megacolon or Hirschsprung's disease

1) Etiology

2) Symptoms

   a) Neonate

   b) Older infants

3) Treatment

4) Nursing responsibilities

a) Preoperative

b) Postoperative

5) Prognosis

h. Inguinal or femoral hernia

1) Etiology

2) Symptoms

3) Treatment

4) Nursing responsibilities

5) Prognosis

i. Hydrocele

1) Etiology

2) Symptoms

3) Treatment

j. Umbilical hernia

1) Etiology

2) Symptom

3) Treatment

4) Nursing responsibilities

4. Discuss conditions affecting the respiratory system.

a. Acute nasopharyngitis; coryza; common cold; rhinitis

1) Etiology

2) Symptoms

3) Complications

4) Treatment

5) Nursing responsibilities

b. Otitis media

1) Etiology

2) Symptoms

3) Complications

4) Treatment

5) Nursing responsibilities

5. Discuss infantile eczema.

   a. Etiology

   b. Symptoms

   c. Complications

   d. Treatment

   e. Nursing responsibilities

6. Discuss the sudden infant death syndrome.

   a. Etiology

   b. Incidence

   c. Basic facts

   d. Reaction and reassurance of the parents

CARING FOR THE HOSPITALIZED INFANT
UNIT III

ANSWERS TO TEST

1.
   a. 3
   b. 10
   c. 5
   d. 11
   e. 9
   f. 2
   g. 7
   h. 4
   i. 8
   j. 6
   k. 1
   l. 15
   m. 20
   n. 14
   o. 19
   p. 18
   q. 12
   r. 21
   s. 16
   t. 13
   u. 22
   v. 17

2. Discussion should include:
   a. Iron deficiency anemia
      1) Etiology
         a) Inadequate diet
         b) Excess intake of milk without adequate supplement
         c) Occult blood loss due to lesions in the gastrointestinal tract such as peptic ulcer
         d) Worm infestation
      2) Symptoms
         a) Pallor
         b) Irritability
         c) Anorexia
         d) Decreased activity
         e) Usually occurs after age of nine months
      3) Complications
         a) Heart murmur
         b) Enlarged spleen
         c) Weakened heart muscle
         d) Heart failure

4) Treatment--Iron preparations orally or intramuscularly

5) Nursing responsibilities

  a) Provide proper diet including organ meats such as liver, egg yolk, legumes, green leafy vegetables, yellow fruits, whole grain and enriched cereals and bread, potatoes, tomatoes, molasses, and cooked dried fruits

  b) Instruct the mother in the importance of iron in the diet, providing a list of iron-rich foods

  c) Inform mother that the infant's stools will be dark or black while taking iron preparations orally

  d) Reduce intake of milk, which is iron-poor, and encourage infant to take other foods

b. Protein malnutrition (Kwashiorkor)

1) Etiology--Severe deficiency of protein in the diet

2) Symptoms

  a) Occurs from four months to five years in children who have been weaned

  b) Slow growth rate

  c) Muscles weak and atrophic

  d) Distended abdomen

  e) Generalized edema

  f) Gastrointestinal symptoms such as anorexia, vomiting, or diarrhea

  g) Hair thin, dry, and bleached

  h) Apathy

3) Complications

  a) Retarded physical and mental development

  b) Secondary infections

  c) High mortality rate

4) Treatment--Mainly preventive by adequate diet

- 5) Nursing responsibilities
  - a) Provide adequate diet
  - b) Encourage food intake
  - c) Instruct parents concerning an adequate diet and its importance
  - d) Be aware of community agencies which may assist financially deprived families

c. Rickets

- 1) Etiology--Deficiency of vitamin D
- 2) Symptoms
  - a) Craniotabes--Softening of the occipital bones
  - b) Delayed closure of the fontanels
  - c) Delayed dentition
  - d) Defective teeth
  - e) Musculoskeletal abnormalities including thoracic deformities, softening of the long bones, and muscular weakness
- 3) Complications
  - a) Tetany
  - b) Pneumonia
  - c) Enteritis
- 4) Treatment
  - a) Formula or milk which has been fortified with vitamin D
  - b) Supplemental vitamin D for breast-fed infants
- 5) Nursing responsibilities
  - a) Encourage infant to eat, using special equipment or techniques as indicated
  - b) Provide emotional support to infant and parents
  - c) Instruct parents in principles and importance of nutrition
  - d) Observe intake and output
  - e) Feed smaller amounts more often to increase total intake

d. Scurvy

   1) Etiology--Deficiency of vitamin C

   2) Symptoms

      a) Irritability

      b) Loss of appetite

      c) Digestive disturbances

      d) Tenderness in the legs

      e) Frog position with hips and knees semiflexed and feet rotated outward

      f) Red, swollen gums that bleed easily

   3) Complications

      a) Hemorrhage in tissues or at the ends of long bones

      b) Exhaustion

      c) Death

   4) Treatment

      a) Adequate diet

      b) Daily therapeutic doses of vitamin C

3. a. Epidemic diarrhea

   1) Etiology

      a) Contaminated food and/or water

      b) Allergic reaction to food

      c) Overfeeding or underfeeding

      d) Poorly balanced diet

   2) Symptoms

      a) Mild diarrhea

         (1) Loose stools, four or more per day

         (2) Irritability

         (3) Anorexia

         (4) Minimal vomiting, distention, or dehydration

b) Severe diarrhea

(1) Marked dehydration

(2) Loss of tissue turgor

(3) Sunken fontanel

(4) Weak, rapid pulse

(5) Greenish, watery stools

(6) Rectal excoriation

(7) Forceful defecation

(8) Persistent vomiting

(9) Fever

(10) Extreme prostration

3) Prognosis--May be fatal unless treatment is begun quickly and is effective

4) Treatment

a) Laboratory tests to determine fluid and electrolyte balance

b) Fluids and/or electrolyte solutions as indicated

c) Change or discontinuation of oral intake

5) Nursing responsibilities

a) Administer fluids as prescribed; may be one of the following

(1) Oral feedings of glucose solution

(2) Other preparations in place of milk

(3) Omission of any oral intake

(4) Skim milk or diluted skim milk

(5) Parenteral fluids

b) Maintain intake and output

(1) Correct speed and amount of IV fluid

(2) Oral intake

(3) Number and character of defecations

(4) Amount and character of vomitus and urine

c) Observe infant's activity and skin condition

d) Take temperature as indicated

e) Maintain isolation technique unless prescribed otherwise

f) Reduce fever by using tepid sponges or cooling mattress

g) Prevent excoriation of the skin in the genital area

(1) Cleanse frequently and apply mineral oil, vaseline, or mild ointment

(2) Leave diaper off to expose affected skin to the air

h) Provide mouth care frequently; apply cream or ointment to lips

i) Provide emotional support

(1) Permit the mother to participate in care

(2) Hold and rock the infant when possible

(3) Soothe the infant by touching, stroking, and talking

(4) Provide pacifier to satisfy sucking needs while oral fluids are limited or discontinued

(5) Remain with the child as much as possible

b. Constipation

1) Etiology

a) Breast-fed infants--Seldom occurs

b) Formula-fed infants

(1) Too little carbohydrate in formula

(2) Insufficient fluid intake

c) Idiopathic megacolon--Hypertrophy and dilatation of the colon

d) Mechanical obstruction or obstruction due to physical condition

2) Symptoms
   - a) Hard, dry, small stools
   - b) Irregular, infrequent defecation

3) Treatment
   - a) Increased amount of sugar in formula
   - b) Increased intake of fruits and/or juices in diet
   - c) Laxatives or enemas

4) Nursing responsibilities
   - a) Adjust diet as prescribed
   - b) Increase fluid intake
   - c) Observe character of stools
   - d) Give laxatives or enemas as prescribed

c. Colic

1) Etiology
   - a) Exact cause unknown
   - b) May be due to swallowed air or emotional tension

2) Symptoms
   - a) Usually occur in latter part of day and the evening
   - b) Loud, continuous crying
   - c) Tense, distended abdomen
   - d) Legs drawn up to abdomen; fists clenched
   - e) Sleep restless and intermittent

3) Nursing responsibilities
   - a) Check to see if infant needs to eruct (burp)
   - b) Apply warmth to abdomen
   - c) Administer rectal glycerine suppository for expulsion of flatus as prescribed
   - d) Comfort infant by holding and rocking
   - e) Administer antispasmodic or sedation such as phenobarbital as prescribed

d. Vomiting and regurgitation

  1) Etiology

    a) Overfeeding

    b) Air swallowing

    c) Allergic reaction

    d) Infection

    e) Organic obstruction

    f) Pyloric stenosis

  2) Symptom--Spitting up of feedings in small or large amounts

  3) Nursing responsibilities

    a) Observe amount, frequency, and characteristics of emesis or regurgitation

    b) Hold bottle during feedings so infant swallows little or no air

    c) Feed infant more slowly

    d) Burp frequently

    e) Avoid strenuous activity just before and after feedings

    f) Prevent infant from crying long and hard before feedings

    g) Provide emotional satisfaction by holding and cuddling

e. Intussusception

  1) Etiology--Unknown

  2) Symptoms

    a) Intermittent incidents of colicky pain with sudden pallor, sharp cry, and flexing of legs onto abdomen

    b) Spasm may last fifteen to twenty minutes followed by period when infant seems normal

    c) Vomiting becomes progressively severe

    d) Infant strains with each spasm of pain until all feces is expelled; rectal discharge then consists of blood and mucus and is given the name of *current jelly* stools

e) Symptoms of shock occur quickly including rapid pulse, pallor, and diaphoresis

f) Occurs more often in boys between the ages of four to ten months

3) Treatment

a) Diagnosis is made through rectal examination, palpation of the abdomen, and barium enema with sedation as necessary before the procedures

b) Occasionally the barium enema will reduce the intussusception

c) Surgery within a few hours is essential

4) Nursing responsibilities

a) Preoperative

(1) NPO

(2) Check vital signs frequently

(3) Monitor IV fluids

(4) Observe closely for additional distress

(5) Place in lateral position to lessen danger of aspiration

(6) Reassure the parents including explanation of the procedures being performed

b) Postoperative

(1) Monitor IV fluids

(2) Resume oral feedings cautiously

(3) Keep surgical area clean and dry

(4) Observe accurate intake and output

(5) Monitor and measure gastric suction when used

(6) Turn frequently

(7) Suction mouth and nose as indicated

(8) Stimulate crying as needed to encourage deep breathing

(9) Reassure parents and explain procedures

5) Prognosis

a) Good when reduced spontaneously or surgically within twelve to twenty-four hours

b) Poor to fatal if treatment is delayed or not given

f. Pyloric stenosis

1) Etiology--Unknown

2) Symptoms

a) First few weeks appear uneventful

b) Vomiting begins occasionally after feedings

c) Vomiting episodes gradually increase in frequency and force, becoming projectile in character

d) Vomitus may contain mucus and be blood-tinged but will never contain bile

e) Weight loss and dehydration occur rapidly

f) Urine becomes scanty; stools decrease

g) Gastric peristaltic waves passing from left to right may be observed in the upper abdomen

3) Treatment

a) Careful observation to prevent dehydration

b) Adjustment of formula, usually to make it thicker and easier to retain

c) Prescribing an antispasmodic, such as atropine, to aid in the passage of food through the pylorus

d) Surgical correction for severe obstruction or when other treatment is unsuccessful

4) Nursing responsibilities

a) Preoperative

(1) Monitor administration of IV fluids

(2) Administer medications before feedings or as prescribed to relax muscular spasm

(3) Observe accurate intake and output

(4) Note physical appearance including skin turgor

(5) Burp the infant before feeding as well as during and after feeding

(6) Feed infant slowly

(7) Handle infant gently and as little as possible particularly after feedings

(8) Place infant on abdomen or right side after feedings to aid passage of food from stomach into the intestine

(9) Elevate head of bed slightly

(10) Record time, type, and amount of feeding taken and retained and type and amount of emesis

(11) Change position frequently

b) Postoperative

(1) Place in lateral position to prevent aspiration of emesis or mucus

(2) Monitor administration of IV fluids and vital signs

(3) Observe for bleeding and/or shock

(4) Change position gently

(5) Hold infant for feedings

(6) Begin giving glucose water as prescribed, usually about six hours postoperatively

(7) Gradually add formula to feedings as tolerated

(8) Observe intake and output, including emesis

5) Prognosis

a) Good if diagnosed and treated early.

b) Recovery is usually rapid and dramatic

c) Surgery is about 99 percent successful

g. Congenital aganglionic megacolon or Hirschsprung's disease

1) Etiology--Congenital absence of ganglion cells within the muscular wall of the distal colon and rectum

2) Symptoms

   a) Neonate

      (1) No passage of meconium

      (2) Bile-stained emesis

      (3) Generalized abdominal distention

   b) Older infants

      (1) Obstinate severe constipation

      (2) Stools ribbonlike or in hard pellets

      (3) Formed stools possible only following enemas

      (4) Rectum usually empty with impaction of feces higher in the colon

      (5) Enlarged, hard abdomen

      (6) General debility

      (7) Anemia

3) Treatment

   a) Colostomy to relieve the obstruction

   b) Resection of the narrowed portion with anastomosis of the remainder of the colon to the anal opening

4) Nursing responsibilities

   a) Preoperative

      (1) Administer oil retention enemas followed by colonic irrigation as prescribed

      (2) Change position frequently

      (3) Elevate head and upper body to decrease pressure on diaphragm

      (4) Observe intake and output

      (5) Keep skin clean and dry

      (6) Always use isotonic saline solution for enemas or colonic irrigations

b) Postoperative

(1) Observe closely

(2) Monitor vital signs; take axillary temperature

(3) Monitor nasogastric tube and IV infusions

(4) Observe for rectal bleeding, abdominal distention, or an elevation in pulse or respiration

(5) Observe intake and output

5) Prognosis--Successful surgery allows the child to grow and develop normally

h. Inguinal or femoral hernia

1) Etiology--Incomplete closure of the inguinal or femoral canal

2) Symptoms

a) Mass in the inguinal or femoral area which is more prominent when the infant cries or strains

b) Irritability, fretfulness, and/or constipation

c) Vomiting and severe abdominal pain if strangulation occurs

3) Treatment

a) Various mechanical braces or trusses are available to maintain the intestine within the abdomen

b) In recent years the success of surgical repair has made surgery the preferred treatment

4) Nursing responsibilities--Postoperative care

a) Keep wound clean

b) Monitor vital signs

c) Observe intake and output; note first voiding after surgery

d) Hold infant for feedings

e) Change position frequently

5) Prognosis--Good

i. Hydrocele

1) Etiology

a) Congenital

b) Secondary to herniorrhaphy

c) Secondary to infection, injury, or trauma

2) Symptoms

a) Swelling of the scrotum

b) Translucent appearance of skin of the scrotum

3) Treatment–None unless complications are present

j. Umbilical hernia

1) Etiology–Imperfect closure or weakness of the umbilical ring

2) Symptom–Soft swelling of the umbilicus which becomes more prominent when the infant cries

3) Treatment

a) Small hernias usually disappear during the first year of life and require no special treatment

b) Large hernias and the rare incarcerated hernia require surgery

4) Nursing responsibilities

a) Keep umbilicus clean

b) Preoperative and postoperative care as indicated if surgery is performed

4. Description should include:

a. Acute nasopharyngitis; coryza; common cold; rhinitis

1) Etiology–Viral infection involving the nasal cavity

2) Symptoms

a) Fever

(1) May reach 102° to 104°F (38.9° to 40°C) in infants over three months

(2) Infants under three months usually afebrile

- b) Frequent sneezing
- c) Irritability and restlessness
- d) Interference with breathing and nursing due to congested nasal passages
- e) Vomiting
- f) Diarrhea

3) Complications--Infections involving the ear, mastoid, throat, or lungs

4) Treatment

- a) Nose drops
- b) Tepid sponge bath
- c) Antipyretics
- d) Increased humidity to thin secretions

5) Nursing responsibilities

- a) Provide for rest, fluids, and proper diet
- b) Observe vital signs; report temperature elevation
- c) Administer nose drops ten to fifteen minutes before feeding
- d) Protect upper lip with an application of lotion or petroleum jelly if nasal discharge is profuse
- e) Isolate the infant
- f) Change position frequently
- g) Discard soiled tissues in a safe manner

b. Otitis media

1) Etiology--Secondary to another infection such as

- a) Throat infection
- b) Upper respiratory infection
- c) Scarlet fever
- d) Measles

2) Symptoms

a) Pain evidenced by irritability, restlessness, and crying

b) Fever

c) Rubbing head or pulling at ear; lying on unaffected side

d) Vomiting

e) Purulent drainage if the typanic membrane ruptures

3) Complications

a) Deafness

b) Mastoiditis

c) Chronic otitis media

d) Meningitis

4) Treatment

a) Antibiotics and analgesics

b) Myringotomy

5) Nursing responsibilities

a) Emotional and physical support as indicated

b) Keep outer ear clean

c) Use ear wicks if drainage is present

d) Place infant on affected side to aid drainage

e) Instill ear drops as prescribed

5. Discussion should include:

a. Etiology

1) Exact cause unknown

2) May be due to

a) Inherited tendency

b) Emotional disturbance

c) Allergens

b. Symptoms

  1) Usually occur between the age of three months and two years
  2) Begins with reddening of the skin followed by the formation of vesicles which weep and form crusts
  3) Becomes more severe in winter
  4) May have periods of remission
  5) Accompanied by intense itching, irritability, and inability to sleep

c. Complications

  1) Secondary infections such as impetigo
  2) Scarring
  3) Increased susceptibility to other skin diseases

d. Treatment

  1) Determination of possible causes by skin testing for sensitivity
  2) Elimination diet to rule out offending foods beginning with a basic diet of hypoallergenic foods
  3) Ointments or solutions to relieve itching
  4) Emollient baths using oatmeal, cornstarch, or baking soda
  5) Corticosteroids
  6) Antibiotics for secondary infections
  7) Postponement of immunizations, particularly smallpox

e. Nursing responsibilities

  1) Isolate to protect from additional infections
  2) Observe response to treatment
  3) Restrain infant to prevent scratching and scarring
    a) Remove restraints at frequent intervals to permit movement and exercise
    b) Check fingers and hands frequently to be sure circulation is adequate

4) Provide emotional support

a) Provide audio and visual stimulation

b) Hold the infant, especially for feedings

c) Permit parents to assist in care and feeding

5) Instruct parents in care

6. Discussion should include:

a. Etiology

1) *Sudden infant death syndrome, SIDS,* or *crib death* are terms applied to any sudden, unexpected, and unexplained death of an infant

2) Postmortem examination fails to show cause of death

b. Incidence

1) May be as high as one out of every 350 babies

2) Causes more deaths in infants after first week of life than any other condition

3) Usually occurs between ages of three weeks and seven months

c. Basic facts

1) It is a definite disease

2) It cannot be predicted or prevented

3) There is no evidence that these deaths are caused by aspiration, suffocation, infection, pain, or neglect

4) Sudden death syndrome occurs in healthy infants

5) There is no evidence that it is a hereditary condition

6) There is no suffering; death occurs within seconds, usually during sleep

7) Despite increased attention received in recent years, the incidence of SIDS is not rising; it seems to have occurred since Old Testament times

d. Reaction and reassurance of the parents

1) After the initial shock of the infant's death, parents may experience extreme depression

2) Grief reactions of husband and wife may differ; one may blame the other

3) Either or both may have difficulty sleeping or experience other physical symptoms

4) They may experience extreme concern for other children or be irritable and impatient with them

5) Siblings may feel guilt or apprehension because of the infant's death or parent's reactions

6) The parents and siblings need a great deal of emotional support and reassurance

7) A national organization of parents of sudden death infants has been formed with chapters throughout the country; the purpose of the organization is to assist parents, educate the community about SIDS, and promote SIDS research

GROWTH AND DEVELOPMENT OF THE TODDLER
UNIT IV

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to describe the growth and development of the toddler at various ages and to discuss the importance of play and prevention of accidents. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. List eight general characteristics of the toddler.
2. Describe the characteristics of the eighteen-month-old child, including physical and social development, physical care, and guidance.
3. Discuss the characteristics of the two-year-old child, including physical and social development, physical care, and guidance.
4. Describe the characteristics of the two and one-half year old child, including physical and social development, physical care, and guidance.
5. Discuss toilet training.
6. Discuss meeting nutritional requirements.
7. Discuss the importance of play.
8. Discuss the supervision of play.
9. Discuss the prevention of various types of accidents.

GROWTH AND DEVELOPMENT OF THE TODDLER
UNIT IV

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information sheet.

   C. Discuss information sheet.

   D. Give test.

II. Student:

   A. Read objective sheet.

   B. Study information sheet.

   C. Participate in discussion.

   D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Test

   D. Answers to test

II. References:

   A. Baker, Katherine R., and Xenia F. Fane. *Understanding and Guiding Young Children*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1971.

   B. Broadribb, Violet, and Charlotte Corliss. *Maternal-Child Nursing*. Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

   C. Thompson, Eleanor D. *Pediatrics for Practical Nurses*. Philadelphia, Pennsylvania: W. B. Saunders Company, 1970.

III. Other materials:

A. Films

1. "Children at Play with Poisons." American Medical Association Film Library, c/o Association-Sterling Films.

2. "Terrible Twos and Trusting Threes." McGraw-Hill Films.

   (NOTE: These films are available to Oklahoma instructors from the Oklahoma State Department of Health.)

3. "The Toddler's Hours of Hazard." Aetna Life and Casualty Film Librarian, Hartford, Connecticut 06115.

B. Filmstrips

1. "Prevention of Accidents to Children." Medical Electronic Educational Services, Inc.

2. "Emergency Treatment of Accidents to Children." Medical Electronic Educational Services, Inc.

GROWTH AND DEVELOPMENT OF THE TODDLER
UNIT IV

INFORMATION SHEET

I. General characteristics of the toddler

  A. Develops sense of autonomy or self-determination

  B. Becomes more independent with increasing control of head, hands, and feet

  C. Grows at a slower rate

  D. Explores curiously

  E. Gains control of body, progressing rapidly from walking to running, jumping, and climbing

  F. Practices new skills and becomes less clumsy

  G. Wants to touch, taste, and smell everything

  H. Rebels against restrictions

  I. Becomes easily frustrated

  J. Displays rapid mood changes

  K. Needs babying at times despite independence

  L. Requires understanding and discipline in learning control of own activity and functions

II. Characteristics of eighteen-month-old child

  A. Physical development

    1. Has protruding abdomen

    2. Climbs on stairs and furniture

    3. Pulls wheeled toys while walking

    4. Can seat self on a child-sized chair or climb into a large chair

    5. Holds own cup to drink

INFORMATION SHEET

B. Social development

1. Gets into everything
2. Increases vocabulary; says about ten words
3. Dislikes sudden changes
4. Has short attention span
5. May have temper tantrums when frustrated
6. Chatters often
7. Imitates behavior of others

C. Physical care

1. Sleep--May remain awake for a while after being put to bed
2. Eating habits
    a. Appetite decreases
    b. Drinks well from a cup
    c. Enjoys feeding self and using a spoon part of the time
    d. Likes to play in food
3. Medical care
    a. DPT booster
    b. Trivalent OPV
    c. Rubella vaccine any time after first birthday until age of puberty

D. Guidance

1. Show approval for achievements but do not show disapproval when acting like a little child
2. Allow the child time to explore and become acquainted with any new setting

INFORMATION SHEET

3. Offer a substitute for a forbidden object

   Example: Instead of insisting the child cannot have the sharp scissors, offer a shiny metal cover from a jar

4. Provide social contacts with adults other than parents

5. Avoid punishing the child for messiness or reactions to strange persons or situations

6. Provide for learning through play activities alone and with other children

7. Select simple toys without sharp corners or small, easily removed pieces

8. Begin toilet training when child is ready

III. Characteristics of the two-year-old child

A. Physical development

1. Weight--26 to 28 pounds (12 to 14 kilograms)

2. Height--32 to 34 inches (60 to 86 centimeters)

3. Pulse--90 to 120 per minute

4. Respirations--20 to 35 per minute

5. Teeth--14 to 16

B. Social development

1. Tries to communicate desires in speech; may stutter frequently

2. Uses short sentences

3. Enjoys simple stories, particularly ones about himself/herself

4. May dance to music or rhythm

5. Imitates actions of others

6. Has difficulty sharing with others because the child is still much concerned with self-discovery

7. Throws a ball

INFORMATION SHEET

C. Physical care

  1. Sleep

    a. Has nighttime ritual such as putting toys in a specific place

    b. Tries to postpone bedtime

    c. Begins to climb out of crib

    d. Still naps once or twice per day

  2. Eating habits

    a. Becomes more adept at feeding self

    b. Plays with food in a purposeful way to find out more about it

    c. Begins to express food likes and dislikes with appetite fluctuations from day to day

    d. Enjoys finger foods and foods which can be eaten with little help

  3. Medical care--Mumps vaccine

D. Guidance

  1. Provide guidelines for behavior

  2. Provide for outdoor play in fenced area or under supervision

  3. Give the child needed attention by recognizing achievements and desirable behavior

  4. Use correct grammar and pronunciation in speaking to the child

  5. Provide for independence through supervised activity to prevent unnecessary injuries or accidents

  6. Observe for signs of readiness to learn bowel control

  7. Avoid forcing toilet training before child is ready; instead, permit child to observe other family members and to imitate their behavior

  8. Praise achievements in toilet training but do not punish failures

INFORMATION SHEET

9. Dress the child in easily removed clothing for toilet training
10. Respect the child's right for own belongings by not expecting or forcing to share toys with other children

IV. Characteristics of the two and one-half year old child

A. Physical development

1. Teeth--All twenty deciduous teeth have appeared
2. Motor activity
    a. Pedals a tricycle
    b. Jumps in place
    c. Builds with blocks
    d. Assists with dressing

B. Social development

1. Accepts mother's absence for short periods
2. Plays interactive games such as tag
3. Has difficulty in making decisions
4. Follows instructions for simple activities such as washing and drying hands
5. Becomes overtired if left to own determination of activity or bedtime

C. Physical care

1. Sleep--May awaken during night and need reassurance
2. Eating habits
    a. Dawdles when eating
    b. Shows preference for some foods
    c. Should be permitted to select foods as long as the child receives a well-balanced diet
    d. Needs small servings and between-meal snacks

INFORMATION SHEET

D. Guidance

1. Help the child to establish self-control and to find socially acceptable outlets for behavior

2. Expect fluctuations of emotions and behavior

3. Provide firm, consistent discipline

4. Assume a positive attitude concerning behavior as much as possible; avoid threatening punishment for misbehavior

5. Make instructions simple enough for the child to understand them

6. Provide clothing loose enough to give freedom of movement

7. Permit child to go barefoot when possible

8. Be certain socks and shoes are large enough

V. Toilet training

A. Begin training when the child is ready, usually at age fifteen to eighteen months or older

B. Use a chair in which the child can sit comfortably with feet on the floor

(NOTE: A fixture which attaches to the adult seat may be used, but many children do better with a child-sized chair.)

C. Leave the child on the chair for only a short time at first

D. Do not expect perfect results

(NOTE: The child very likely will have a movement soon after leaving the chair. This is not done deliberately and the child should not be punished.)

E. Take no notice of occasional lapses of control

(NOTE: Lapse of control may be due to diarrhea, ignoring the indication to defecate, or an attempt to show anger or frustration.)

F. Expect bladder training to begin when the child stays dry for as long as two hours at a time

(NOTE: Daytime control of the bladder is achieved earlier than nighttime control.)

INFORMATION SHEET

G. Watch the child for signs of readiness to begin bladder control

1. Begins to connect wet pants or the puddle on the floor with something he/she did
2. Indicates need to urinate after it happens

H. Do not punish the child for periods of regression which may be due to change of surroundings, illness, or stress of any kind

I. Treat each child individually; there is no set, ideal age for training

VI. Meeting nutritional requirements

A. Need for food is decreasing as rate of growth decreases

B. Eating habits may be inconsistent and imitative

C. Refusal to eat may be due to fatigue, interest in other activities, or decreased need for food

D. Forcing the toddler to eat may create other problems; the child will be quick to sense the mother's frustration and may use refusal to eat as a means of getting attention

E. Food portions should be small, attractive, and varied; give the child some selection in the menu

F. Foods should be served at moderate temperature and in a form easily managed by the child

(NOTE: Liquids and semiliquids are more difficult for the toddler to eat than solid foods.)

G. A balanced diet should be provided with attention to the basic four food groups

H. Between-meal snacks should consist of fruit, simple cookies, vegetable sticks, or juices instead of cake, candy, or pop

I. Eating utensils should be small enough for the child to handle with ease

VII. Importance of play

A. Provides exercise for muscles

B. Stimulates learning and coordination as the child explores and tries new activities

INFORMATION SHEET

C. Provides relief from emotional tension

D. Provides a way of explaining procedures, treatments, and other situations to a hospitalized child

Example: The nurse can use a doll or stuffed toy to show the child how a treatment will be done

VIII. Supervising play

A. Provide toys suitable for the child's age, size, and ability

(NOTE: Simple toys are best for toddlers. Toys that are too large or difficult to maneuver may cause frustration or injuries.)

B. Permit the toddler to be possessive with own toys; sharing will come later in development; parallel play is characteristic

C. Protect toddlers from each other in playing; the stronger, more aggressive child may unintentionally injure a smaller, passive child

D. Avoid toys with small, easily removed parts or toys with sharp edges

IX. Accidents and their prevention

(NOTE: Accidents are the major causes of death in childhood.)

A. Automobile accidents

1. Hold the toddler's hand when crossing streets

2. Do not permit children to play in or near parked cars or in the street or driveway

3. Do not leave small children unattended in a car

4. Use seat belts or approved car seats for children; lock car door

5. Supervise the child constantly when playing in an unfenced area

6. Begin safety teaching early

B. Burns

1. Teach the child the meaning of *hot*

2. Keep matches and lighters out of the child's reach

3. Turn handles of cooking utensils to inside area of stove

INFORMATION SHEET

4. Remain with child while he/she is in the bathtub
5. Place hot beverage containers out of child's reach
6. Protect from electrical contacts
7. Screen or protect child from fireplace or other heating equipment
8. Consider safety factors when selecting home appliances

C. Falls

1. Teach children how to go up and down stairs when they show a readiness
2. Fasten crib sides securely
3. Keep stairway clear with door or gate closed tightly
4. Avoid slippery floors by mopping up any spills and by using nonslippery floor coverings
5. Never leave an infant or child on a flat surface unattended
6. Keep sharp objects out of the child's reach
7. Screen open windows
8. Teach the child not to climb on furniture or high places

D. Suffocation and choking

1. Avoid small objects which can be aspirated or pushed into body openings
2. Avoid toys with small, easily removed parts
3. Do not permit small children to play with balloons
4. Do not feed popcorn, nuts, or small candies to a young child
5. Keep plastic bags or thin plastic covering away from babies and children
6. Avoid bedclothes with drawstrings or ties
7. Do not try to give medicine or liquids to a crying child; it may be aspirated

INFORMATION SHEET

8. Keep child away from venetian blind cords or drapery cords

   (NOTE: If the crib is near such cords, the child may become entangled in them.)

9. Turn child to one side or elevate hips slightly when vomiting; do not try to pick him/her up while vomiting

10. Avoid hanging toys on crib sides

E. Poisoning

   1. Store detergents and cleaning supplies out of child's reach

      (NOTE: Dishwasher detergents, laundry detergents, and petroleum-based furniture polishes are the household chemicals which cause the greatest number of injuries to small children.)

   2. Keep all medications out of child's reach

   3. Never use medication from an unlabeled bottle

   4. Use only approved paints on children's furnishings and toys

   5. Wash fruits and vegetables before eating

   6. Remain calm when poisoning occurs

      a. Seek immediate assistance from poison control center, physician, or hospital

      b. Carry out first aid measures

      c. Take child to the nearest hospital

      d. Take the container of poison to the hospital with the child

      e. Take any vomitus to be analyzed

F. Drowning

   1. Remain with the child any time he/she is in water, either in the tub or wading pool

   2. Empty pool or tub after each use

   3. Supervise activity closely if water is nearby

   4. Cover wells or cesspools securely

   5. Know techniques for resuscitation of drowning victims

GROWTH AND DEVELOPMENT OF THE TODDLER
UNIT IV

TEST

1. List eight general characteristics of the toddler.
   a.
   b.
   c.
   d.
   e.
   f.
   g.
   h.
2. Describe the characteristics of the eighteen-month-old child.
   a. Physical development

   b. Social development

   c. Physical care

d. Guidance

3. Discuss the characteristics of the two-year-old child.

a. Physical development

b. Social development

c. Physical care

d. Guidance

4. Describe the characteristics of the two and one-half year old child.

   a. Physical development

   b. Social development

   c. Physical care

   d. Guidance

5. Discuss toilet training.

6. Discuss meeting nutritional requirements.

7. Discuss the importance of play.

8. Discuss the supervision of play.

9. Discuss the prevention of the following types of accidents.

   a. Drowning

   b. Automobile accidents

   c. Falls

   d. Poisoning

   e. Suffocation and choking

f. Burns

GROWTH AND DEVELOPMENT OF THE TODDLER
UNIT IV

ANSWERS TO TEST

1. Any eight of the following:
   a. Develops sense of autonomy or self-determination
   b. Becomes more independent with increasing control of head, hands, and feet
   c. Grows at a slower rate
   d. Explores curiously
   e. Gains control of body, progressing rapidly from walking to running, jumping, and climbing
   f. Practices new skills and becomes less clumsy
   g. Wants to touch, taste, and smell everything
   h. Rebels against restrictions
   i. Becomes easily frustrated
   j. Displays rapid mood changes
   k. Needs babying at times despite independence
   l. Requires understanding and discipline in learning control of own activity and functions
2. Description should include:
   a. Physical development
      1) Has protruding abdomen
      2) Climbs on stairs and furniture
      3) Pulls wheeled toys while walking
      4) Can seat self on a child-sized chair or climb into a large chair
      5) Holds own cup to drink

b. Social development

  1) Gets into everything

  2) Increases vocabulary; says about ten words

  3) Dislikes sudden changes

  4) Has short attention span

  5) May have temper tantrums when frustrated

  6) Chatters often

  7) Imitates behavior of others

c. Physical care

  1) Sleep--May remain awake for a while after being put to bed

  2) Eating habits

    a) Appetite decreases

    b) Drinks well from a cup

    c) Enjoys feeding self and using a spoon part of the time

    d) Likes to play in food

  3) Medical care

    a) DPT booster

    b) Trivalent OPV

    c) Rubella vaccine any time after first birthday until age of puberty

d. Guidance

  1) Show approval for achievements but do not show disapproval when acting like a little child

  2) Allow the child time to explore and become acquainted with any new setting

  3) Offer a substitute for a forbidden object

  4) Provide social contacts with adults other than parents

  5) Avoid punishing the child for messiness or reactions to strange persons or situations

6) Provide for learning through play activities alone and with other children

7) Select simple toys without sharp corners or small, easily removed pieces

8) Begin toilet training when child is ready

3. Discussion should include:

a. Physical development

1) Weight--26 to 28 pounds (12 to 14 kilograms)

2) Height--32 to 34 inches (60 to 86 centimeters)

3) Pulse--90 to 120 per minute

4) Respirations--20 to 35 per minute

5) Teeth--14 to 16

b. Social development

1) Tries to communicate desires in speech; may stutter frequently

2) Uses short sentences

3) Enjoys simple stories, particularly ones about himself/herself

4) May dance to music or rhythm

5) Imitates actions of others

6) Has difficulty sharing with others because the child is still much concerned with self-discovery

7) Throws a ball

c. Physical care

1) Sleep

a) Has nighttime ritual such as putting toys in a specific place

b) Tries to postpone bedtime

c) Begins to climb out of crib

d) Still naps once or twice per day

- 2) Eating habits
    - a) Becomes more adept at feeding self
    - b) Plays with food in a purposeful way to find out more about it
    - c) Begins to express food likes and dislikes with appetite fluctuations from day to day
    - d) Enjoys finger foods and foods which can be eaten with little help
- 3) Medical care--Mumps vaccine

d. Guidance

- 1) Provide guidelines for behavior
- 2) Provide for outdoor play in fenced area or under supervision
- 3) Give the child needed attention by recognizing achievements and desirable behavior
- 4) Use correct grammar and pronunciation in speaking to the child
- 5) Provide for independence through supervised activity to prevent unnecessary injuries or accidents
- 6) Observe for signs of readiness to learn bowel control
- 7) Avoid forcing toilet training before child is ready; instead, permit child to observe other family members and to imitate their behavior
- 8) Praise achievements in toilet training but do not punish failures
- 9) Dress the child in easily removed clothing for toilet training
- 10) Respect the child's right for own belongings by not expecting or forcing to share toys with other children

4. Description should include:

a. Physical development

- 1) Teeth--All twenty deciduous teeth have appeared
- 2) Motor activity
    - a) Pedals a tricycle
    - b) Jumps in place

c) Builds with blocks

d) Assists with dressing

b. Social development

1) Accepts mother's absence for short periods

2) Plays interactive games such as tag

3) Has difficulty in making decisions

4) Follows instructions for simple activities such as washing and drying hands

5) Becomes overtired if left to own determination of activity or bedtime

c. Physical care

1) Sleep--May awaken during night and need reassurance

2) Eating habits

a) Dawdles when eating

b) Shows preference for some foods

c) Should be permitted to select foods as long as the child receives a well-balanced diet

d) Needs small servings and between-meal snacks

d. Guidance

1) Help the child to establish self-control and to find socially acceptable outlets for behavior

2) Expert fluctuations of emotions and behavior

3) Provide firm, consistent discipline

4) Assume a positive attitude concerning behavior as much as possible; avoid threatening punishment for misbehavior

5) Make instructions simple enough for the child to understand them

6) Provide clothing loose enough to give freedom of movement

7) Permit child to go barefoot when possible

8) Be certain socks and shoes are large enough

5. Discussion should include:

   a. Begin training when the child is ready, usually at age fifteen to eighteen months or older

   b. Use a chair in which the child can sit comfortably with feet on the floor

   c. Leave the child on the chair for only a short time at first

   d. Do not expect perfect results

   e. Take no notice of occasional lapses of control

   f. Expect bladder training to begin when the child stays dry for as long as two hours at a time

   g. Watch the child for signs of readiness to begin bladder control

      1) Begins to connect wet pants or the puddle on the floor with something he/she did

      2) Indicates need to urinate after it happens

   h. Do not punish the child for periods of regression which may be due to change of surroundings, illness, or stress of any kind

   i. Treat each child individually; there is no set, ideal age for training

6. Discussion should include:

   a. Need for food is decreasing as rate of growth decreases

   b. Eating habits may be inconsistent and imitative

   c. Refusal to eat may be due to fatigue; interest in other activities, or decreased need for food

   d. Forcing the toddler to eat may create other problems; the child will be quick to sense the mother's frustration and may use refusal to eat as a means of getting attention

   e. Food portions should be small, attractive, and varied; give the child some selection in the menu

   f. Foods should be served at moderate temperature and in a form easily managed by the child

   g. A balanced diet should be provided with attention to the basic four food groups

h. Between-meal snacks should consist of fruit, simple cookies, vegetable sticks, or juices instead of cake, candy, or pop

i. Eating utensils should be small enough for the child to handle with ease

7. Discussion should include:

a. Provides exercise for muscles

b. Stimulates learning and coordination as the child explores and tries new activities

c. Provides relief from emotional tension

d. Provides a way of explaining procedures, treatments, and other situations to a hospitalized child

8. Discussion should include:

a. Provide toys suitable for the child's age, size, and ability

b. Permit the toddler to be possessive with own toys; sharing will come later in development; parallel play is characteristic

c. Protect toddlers from each other in playing; the stronger, more aggressive child may unintentionally injure a smaller, passive child

d. Avoid toys with small, easily removed parts or toys with sharp edges

9. Discussion should include:

a. Drowning

1) Remain with the child any time he/she is in water, either in the tub or wading pool

2) Empty pool or tub after each use

3) Supervise activity closely if water is nearby

4) Cover wells or cesspools securely

5) Know techniques for resuscitation of drowning victims

b. Automobile accidents

1) Hold the toddler's hand when crossing streets

2) Do not permit children to play in or near parked cars or in the street or driveway

3) Do not leave small children unattended in a car

4) Use seat belts or approved car seats for children; lock car door

5) Supervise the child constantly when playing in an unfenced area

6) Begin safety teaching early

c. Falls

1) Teach children how to go up and down stairs when they show a readiness

2) Fasten crib sides securely

3) Keep stairway clear with door or gate closed tightly

4) Avoid slippery floors by mopping up any spills and by using nonslippery floor coverings

5) Never leave an infant or child on a flat surface unattended

6) Keep sharp objects out of the child's reach

7) Screen open windows

8) Teach the child not to climb on furniture or high places

d. Poisoning

1) Store detergents and cleaning supplies out of child's reach

2) Keep all medications out of child's reach

3) Never use medication from an unlabeled bottle

4) Use only approved paints on children's furnishings and toys

5) Wash fruits and vegetables before eating

6) Remain calm when poisoning occurs

a) Seek immediate assistance from poison control center, physician, or hospital

b) Carry out first aid measures

c) Take child to the nearest hospital

d) Take the container of poison to the hospital with the child

e) Take any vomitus to be analyzed

e. Suffocation and choking

1) Avoid small objects which can be aspirated or pushed into body openings

2) Avoid toys with small, easily removed parts

3) Do not permit small children to play with balloons

4) Do not feed popcorn, nuts, or small candies to a young child

5) Keep plastic bags or thin plastic covering away from babies and children

6) Avoid bedclothes with drawstrings or ties

7) Do not try to give medicine or liquids to a crying child; it may be aspirated

8) Keep child away from venetian blind cords or drapery cords

9) Turn child to one side or elevate hips slightly when vomiting; do not try to pick him/her up while vomiting

10) Avoid hanging toys on crib sides

f. Burns

1) Teach the child the meaning of *hot*

2) Keep matches and lighters out of the child's reach

3) Turn handles of cooking utensils to inside area of stove

4) Remain with child while he/she is in the bathtub

5) Place hot beverage containers out of child's reach

6) Protect from electrical contacts

7) Screen or protect child from fireplace or other heating equipment

8) Consider safety factors when selecting home appliances

CARING FOR THE HOSPITALIZED TODDLER
UNIT V

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to discuss various conditions for which the toddler may be hospitalized and the nursing care for each of these conditions. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with this unit to the correct definitions.
2. List guidelines in caring for the hospitalized toddler.
3. Discuss etiology, symptoms, treatment, and nursing responsibilities for cerebral palsy.
4. List major causes, symptoms, and most common locations and their treatment for fractures.
5. Discuss nursing responsibilities before and after reduction of fractures.
6. Discuss types, etiology, symptoms, treatment, and nursing responsibilities for head injuries.
7. Describe pinworm and its treatment.
8. Discuss etiology, symptoms, treatment, and nursing responsibilities for croup or spasmodic laryngitis.
9. Discuss etiology, symptoms, treatment, and nursing responsibilities for acute bronchitis.
10. Discuss types, symptoms, treatment, and nursing responsibilities for pneumonia or pneumonitis.
11. Describe symptoms, treatment, and nursing responsibilities of nephrosis.
12. Discuss incidence, types of involvement, treatment, and nursing responsibilities for cystic fibrosis or mucoviscidosis.
13. Discuss the battered child syndrome including characteristics of parents and child, most common injuries, legal responsibilities, and nursing responsibilities.

CARING FOR THE HOSPITALIZED INFANT
UNIT V

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information sheet.

  C. Discuss terminal and specific objectives.

  D. Discuss information sheet.

  E. Obtain information from the Oklahoma State Department of Institutions, Social and Rehabilitative Services, concerning child abuse laws.

  F. Determine what community agencies offer assistance for the abused child or its parents.

  G. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Determine the physician's and nurse's legal responsibilities concerning child abuse and what community agencies offer assistance to the child or its parents.

  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Transparency masters

1. TM 1--Bryant's Traction
2. TM 2--Russell Traction

D. Test

E. Answers to test

II. References:

A. Brisbane, Holly E. *The Developing Child.* Peoria, Illinois: Chas. A. Bennett Company, Inc., 1971.

B. Broadribb, Violet, and Charlotte Corliss. *Maternal-Child Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

C. Kalisch, Beatrice J. "Child Abuse." *Nursing Care,* June 1974.

D. Petrillo, Madeline, and Sirgay Sanger. *Emotional Care of Hospitalized Children.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1972.

E. Thompson, Eleanor D. *Pediatrics for Practical Nurses.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1970.

III. Other materials:

A. Films

1. "One Day's Poison." McGraw-Hill Films.
2. "Two-Year-Old Goes to the Hospital." New York University Film Library, 26 Washington Place, New York, New York 10003.

(NOTE: The above films are available to Oklahoma instructors from the Oklahoma State Department of Health.)

B. Filmstrips

1. "Renal Diseases in Children." Medical Electronic Educational Services, Inc.
2. "Admission and Orientation of the Child." Trainex Corporation.
3. "The Young Spastic Child." Trainex Corporation.

CARING FOR THE HOSPITALIZED TODDLER
UNIT V

INFORMATION SHEET

I. Terms and definitions

A. Cerebral palsy--Disorders arising from a malfunction of motor centers and nerve pathways in the brain

B. Athetosis--Involuntary movements characterized by recurrent, slow, wormlike, and more or less continual change of position of the fingers, toes, hands, feet, and other parts of the body; a form of cerebral palsy

C. Spasticity--Hypertension of muscles causing stiff and awkward movements

D. Clonus--Spasmodic alteration of contraction and relaxation

E. Scissoring--Tendency for the legs to cross on standing or lying due to spasm

F. Ataxia--Incoordination of voluntary muscular action, particularly of the muscle groups used in activities such as walking or reaching for objects

G. Kinesthetic--Pertaining to the sense of perception of movement, weight, resistance, and position

H. Croup--Condition of the upper respiratory pathway with acute inflammation and/or spasm of the pharynx, larynx, and trachea

I. Stridor--Harsh, high-pitched sound produced during respiration

J. Acute bronchitis--Acute inflammation of the bronchi due to infections or irritant agents

K. Eccrine gland--Small sweat gland

L. Cystic fibrosis--Generalized, heritable disease of unknown etiology associated with dysfunction of exocrine and eccrine glands, including mucus-producing glands

M. Pneumonia--Inflammation of the lungs associated with exudate in the alveoli

N. Interstitial--Space between the cells

O. Pneumonitis--Inflammation of the lungs in which the exudate is primarily interstitial

P. Lobar pneumonia--Pneumonia involving one or more lobes of the lungs

INFORMATION SHEET

Q. Bronchial pneumonia--Pulmonary inflammation concentrated about the bronchi

R. Lipid pneumonia--Pneumonia due to aspiration of an oily substance such as kerosene, mineral oil, cod-liver oil, or ointment

S. Sternal retraction--Excessive drawing in of the muscles attached to the sternum during inspiration

T. Nephrosis--Kidney disease in which there is a malfunction of the tissue without inflammation

U. Trocar--Instrument with a triangular tip and a hollow cannula used to puncture a body cavity for withdrawal of fluid

V. Paracentesis--Withdrawal of fluid from a cavity by means of a hollow needle or trocar

W. Ascites--Accumulation of serous fluid in the peritoneal cavity

X. Bronchiectasis--Permanent dilatation of one or more bronchi, usually due to bronchial obstruction and infection

II. Guidelines in caring for the hospitalized toddler

A. Obtain personal history information from parents; permit child to continue accustomed activity such as using toilet chair, taking bottle, or using nightlight at bedtime

B. Assign one person to care for the child and work with the parents

C. Permit parents to participate in child's care and to remain with the child

D. Assist the parents to leave the child; instruct them to indicate when they will return in relation to the child's activities

(NOTE: Toddlers have a poor concept of time but will understand that mother is returning after lunchtime or at suppertime more easily than one o'clock or other clock time.)

E. Ask parents to leave a personal article or favorite toy to reassure the child

F. Permit child to examine equipment that is to be used in care or treatment

G. Tell the child about treatment or surgery a short time before it is to be performed

H. Be truthful about hurting

INFORMATION SHEET

I. Do not imply a choice when none is possible

Example: Do not ask the child if treatment can be given when the treatment must be given

J. Allow opportunity for the parents to express their feelings and fears or to ask questions

K. Avoid discussing the child within hearing; assume that the child can comprehend what is being said

III. Cerebral palsy

A. Etiology

1. Birth injuries
2. Anoxia
3. Subdural hemorrhage
4. Infections such as meningitis or encephalitis
5. Kernicterus
6. Prenatal infections

B. Types of cerebral palsy and their symptoms

1. Athetoid
    a. Involuntary uncoordinated movement
    b. Varying degrees of muscle tension
    c. Purposeless movements which increase whenever voluntary movement is attempted
2. Spastic
    a. Tension in certain muscle groups
    b. Increased activity of deep tendon reflexes
    c. Clonus
    d. Muscle contractures
    e. Scissoring of lower extremities

INFORMATION SHEET

3. Ataxic
    a. Lack of coordination
    b. Disturbed kinesthetic and balance senses
4. Rigid--Stiff, unyielding posture

C. Treatment

1. Early diagnosis
2. Splints or braces to prevent contractures
3. Orthopedic surgery

D. Nursing responsibilities

1. Provide proper skin care to prevent pressure or friction sores
2. Keep bedclothes clean, dry, and wrinkle-free
3. Encourage the child to do as much as possible even when it takes longer

    Example: When the child takes his/her own bath, muscles are exercised more than when the nurse gives the bath

4. Maintain good posture for the child in bed
5. Feed the child slowly to prevent undue stress and possible aspiration; permit child to feed self as able
6. Provide for play activity alone and with others
7. Provide for frequent rest periods

    (NOTE: The child with cerebral palsy must work harder to perform even the simplest task and therefore tires easily and has difficulty relaxing.)

8. Assist as indicated in providing physical therapy and educational opportunities

    (NOTE: The acceptance and guidance given a handicapped child during the formative years greatly influence his/her reaction to the circumstances.)

INFORMATION SHEET

9. Provide emotional support for the child and parents; encourage assocation with others having similar problems

   (NOTE: The United Cerebral Palsy Association has many loc chapters. Two Oklahoma chapters are United Cerebral Palsy Oklahoma, Inc., in Oklahoma City and Cerebral Palsy Association of Tulsa.)

IV. Fractures

A. Major causes

1. Falls from high chair, crib, or other high places
2. Automobile accident
3. Rolling off bed or flat surface
4. Battered child syndrome

B. Symptoms

1. Pain
2. Tenderness on movement
3. Swelling
4. Discoloration
5. Obvious deformity or change in shape or size
6. Inability to bear weight or use affected limb
7. Numbness

C. Most common locations and their treatment

(NOTE: The purpose of the treatment is immobilization of the affected bone.)

1. Femur
   a. Bryant's traction (Transparency 1)
   b. Russell traction (Transparency 2)
   c. Body cast

INFORMATION SHEET

2. Clavicle--Figure-of-eight bandage for shoulder immobilization
3. Humerus or elbow
    a. Hanging cast
    b. Bandage
    c. Arm traction

V. Nursing responsibilities for fractures

A. Before reduction

1. Remove clothing gently from unaffected parts and then from injured part
2. Cut clothes off if necessary
3. Avoid moving the injured part
4. Prepare for x-rays, traction, or other treatment as directed by the physician

B. After reduction

1. Maintain correct position when Bryant's traction is used
    a. Legs are suspended at right angles to the body
    b. Buttocks are raised off mattress slightly
    c. Upper body is restrained with a jacket as necessary to maintain position
    d. Weights must hang free providing continuous traction
2. Maintain position as prescribed when other treatment is used
3. Check toes frequently for changes in color, temperature, and feeling; report any cyanosis, numbness, or irritation
4. Provide skin care
    a. Bathe exposed areas daily and as needed
    b. Rub back and buttocks frequently
    c. Keep linens clean, dry, and free of wrinkles or crumbs

INFORMATION SHEET

5. Provide warmth as needed
6. Encourage child to exercise unaffected extremities
7. Change position as indicated
8. Provide diet high in roughage and fluids
9. Provide emotional support
    a. Encourage parents to participate in care
    b. Expect and permit behavior regression
    c. Permit child to do things for self as possible
    d. Provide diversions to stimulate physical and mental development

VI. Head injuries

A. Types

1. Concussion
2. Skull fracture
3. Subdural hematoma

B. Etiology

1. Blow to the head
2. Severe fall
3. Automobile accident

C. Symptoms

1. Headache
2. Swelling at site
3. Drowsiness
4. Change in pulse rate or blood pressure
5. Eye signs such as blurred vision, inequality of pupils, or nystagmus
6. Vomiting
7. Unconsciousness

INFORMATION SHEET

D. Treatment

1. Observation
2. Skull x-rays

E. Nursing responsibilities

1. Check vital signs frequently; report any significant changes
2. Observe for drowsiness, blurred vision, vomiting, pallor, shock, and unconsciousness
3. Observe the patient's eyes for equality of pupils
4. Awaken the patient periodically to be sure he/she is not comatose
5. Keep patient quiet
6. Maintain patent airway
7. Elevate head slightly unless contraindicated

VII. Pinworm

A. Description

1. Is most common type affecting humans
2. Resembles a thin white thread about one-third inch long
3. Lays eggs around the anal opening
4. Infects child who handles contaminated toys or linens
5. Enters intestinal tract through the mouth

B. Symptoms

1. Itching in anal area
2. Irritability and restlessness
3. Weight loss
4. Poor appetite
5. Fretfulness during the night

INFORMATION SHEET

C. Treatment

1. Pinworm diagnostic tape test
2. Anthelmintic such as Antepar
3. Oil and/or cleansing saline enemas
4. Rectal ointments

D. Nursing responsibilities

1. Observe linen and stool precautions for infected feces
2. Sterilize bedpan following each use
3. Teach child to wash hands well after each defecation
4. Keep child's fingernails short
5. Apply rectal ointments as prescribed
6. Instruct parents in treatment of other family members

VIII. Croup or spasmodic laryngitis

A. Etiology

1. Smaller air passages cause greater incidence and seriousness of respiratory distress
2. Acute laryngitis
3. Variety of infectious organisms

B. Symptoms

1. Hoarse cough
2. Dyspnea
3. Sudden onset during the night, often without earlier symptoms
4. Inspiration difficult and accompanied by stridor
5. Expiration normal
6. Duration of few hours usually

INFORMATION SHEET

7. Usually less severe on recurring nights

8. Seldom fatal

9. Not communicable

C. Treatment

1. Emetic to induce vomiting which helps reduce the laryngeal spasm

2. Sedative, such as phenobarbital, after vomiting

3. Croup tent or moist inhalations to increase humidity

D. Nursing responsibilities

1. Remain with the child until the emetic has induced vomiting

2. Explain the croup tent or croupette to the child and parents when one is to be used

(NOTE: When a croup tent is unavailable, a humidifier may be used. In the home the child may be taken into the bathroom and permitted to inhale the moist air produced by running hot water in sink and tub or shower.)

3. Change position frequently to help avoid complications

4. Observe vital signs, particularly rate and character of respirations

5. Observe for color, restlessness, and anxiety

6. Report any increase in respiratory difficulty

7. Reassure the child and parents; fear and apprehension may increase respiratory distress

IX. Acute bronchitis

A. Etiology

1. Occurs as a secondary infection

2. Is caused by a variety of organisms

3. May be precipitated by poor nutrition, allergy, or chronic respiratory infection

4. May be a familial tendency

INFORMATION SHEET

B. Symptoms

1. Dry cough which becomes looser as disease continues
2. Secretion of large amounts of sputum which may be aspirated into the trachea and bronchi
3. Vomiting
4. Moderate fever, usually under 102°F (39°C)
5. Complaint of dry throat or sore chest
6. Less frequent occurrence after age of four

C. Treatment

1. Antipyretics and antibiotics
2. Increased humidity
3. Nose drops
4. Examination for possible complications or contributing conditions such as infected tonsils or adenoids, cystic fibrosis, allergy, tuberculosis, or other disorders

D. Nursing responsibilities

1. Increase humidity to aid in loosening secretions

   (NOTE: Humidifier, croup tent, or croupette may be used.)
2. Plan nursing care to provide adequate rest
3. Elevate upper part of child's body to facilitate breathing

   (NOTE: For an older child one end of the mattress can be elevated. An infant can be supported in an infant seat which has been secured to prevent tipping.)
4. Clean nose PRN, especially before administering food or medication
5. Monitor intake and output; provide adequate intake to aid excretion of aspirin
6. Administer food, fluids, and medications slowly to allow adequate time for breathing between swallows

INFORMATION SHEET

7. Monitor vital signs

8. Observe respirations for dyspnea, mouth breathing, flaring of the nostrils, sternal retractions, and stridor; note type and amount of coughing

9. Observe skin, mucous membranes, and fingernails for color

   (NOTE: In the Negro child the palms of the hands, soles of the feet, and lower eyelids may be observed for pallor or cyanosis.)

10. Note general behavior of child and record such symptoms as restlessness, listlessness, irritability, apathy, or contentment

11. Provide emotional support

    a. Hold child when possible

    b. Pat or touch child when holding is not possible

    c. Provide audio and visual stimulation

    d. Reassure parents; permit them to assist with care of child

X. Pneumonia or pneumonitis

   A. Types

      1. Bacterial

      2. Viral

      3. Lobar

      4. Bronchial

      5. Aspiration

      6. Lipid

      7. Hypostatic

      8. Primary

      9. Secondary

INFORMATION SHEET

B. Symptoms

  1. Influenced by age and causative organism
  2. Onset sudden or preceded by upper respiratory infection
  3. Dry cough that gradually becomes productive
  4. High fever 103° to 104°F (39.5° to 40°C) with wide fluctuations during a 24-hour period
  5. Increased respiratory rate 40 to 80 per minute in infants, 30 to 50 per minute in children
  6. Shallow respirations due to chest pain
  7. Sternal retraction present as respirations become difficult
  8. Listlessness
  9. Anorexia
  10. Tendency to lie on affected side

C. Treatment

  1. Complete physical examination including blood and urine tests and x-rays
  2. Cultures of nose and throat to identify causative organism
  3. Antibiotics or sulfonamides
  4. Antipyretics
  5. Oxygen as indicated
  6. Analgesics as needed

D. Nursing responsibilities

  1. Isolate child as indicated
  2. Administer oxygen and increase humidity as prescribed
  3. Provide for adequate rest by careful planning of care and treatment
  4. Monitor vital signs, character, type, and frequency of cough
  5. Give tepid sponges as prescribed to reduce fever

INFORMATION SHEET

6. Encourage fluid intake; offer small amounts frequently

7. Assist with parenteral fluids if vomiting persists

8. Observe intake and output; adequate fluid intake is necessary to aid in excretion of sulfonamides and toxic substances

9. Turn regularly to aid in preventing complications

10. Provide for proper disposal of tissues

11. Observe for unfavorable symptoms such as weak rapid pulse, cyanosis, abdominal distention, constipation, and disorientation

XI. Nephrosis

(NOTE: Nephrosis occurs more often in boys and usually affects children age two and one-half years or younger. Etiology is unknown.)

A. Symptoms

1. Edema about the eyes and ankles and gradually becoming generalized

   (NOTE: This is a characteristic symptom which occurs before any other evidence of illness.)

2. Weight gain due to edema

3. Distended abdomen

4. Pallor

5. Irritability

6. Listlessness

7. Poor appetite

8. Albuminuria

9. Vomiting

10. Diarrhea

11. Hypoproteinemia

12. Hypercholesteremia

INFORMATION SHEET

B. Treatment

1. Control of edema with diuretics or hormone therapy
2. High protein diet
3. Abdominal paracentesis for removal of ascites
4. Home care of child with special therapy in a hospital

C. Nursing responsibilities

1. Provide good skin care with special attention to any folds which may retain moisture
2. Handle gently to avoid injury to the skin
3. Provide support for edematous male genitals
4. Separate skin surfaces with pads of cotton or soft cloth
5. Change position frequently to prevent respiratory infection
6. Elevate head at intervals to aid in periodic reduction of edema of eyelids
7. Cleanse eyes frequently
8. Provide small, attractive servings of food
9. Encourage child to eat
10. Measure abdomen as prescribed
11. Maintain intake and output; instruct parents and child how to assist in keeping intake and output accurately
12. Estimate amount of output if child is not toilet-trained by noting amount and frequency of voidings
13. Observe character, odor, and color of urine
14. Weigh two or three times per week to determine changes in edema

INFORMATION SHEET

15. Prevent exposure to other infections, particularly respiratory
16. Maintain aseptic technique
17. Check vital signs regularly; report elevations
18. Provide emotional support

XII. Cystic fibrosis or mucoviscidosis

A. Incidence

1. Occurs in one of every 2000 live births in Caucasians
2. Occurs less frequently in other races
3. Is inherited as a recessive trait

   (NOTE: The parents, carriers of the recessive trait, show no symptoms of the disease. If four children are born of the union, the statistical expectation is that two will carry the trait but show no symptoms, one will be free of trait or disease, and one will have the disease. Any child born to these parents has a twenty-five percent chance of having the disease no matter what the siblings have inherited.)

4. Is the most common serious chronic condition in children

B. Types of involvement

1. Meconium ileus

   a. Symptoms

      1) Evident very soon after birth

      2) Very thick, sticky meconium due to absence or marked decrease of pancreatic enzymes

      3) Fibrocystic involvement in five to ten percent of all cases

   b. Complications

      1) Complete obstruction of the small intestine requiring immediate surgery

INFORMATION SHEET

2) High mortality rate

3) Other manifestations of the disease following surgery

2. Obstruction of the pancreatic ducts

   a. Symptoms

      1) Absent or diminished output of pancreatic juices

      2) Intestinal malabsorption

      3) Bulky, greasy, foamy, light-colored, foul-smelling stools

   b. Complications

      1) Severe malnutrition

      2) Rectal prolapse

3. Pulmonary involvement

   a. Symptoms

      1) Thickened mucus causing obstruction of the air passages

      2) Expiration more difficult than inspiration

      3) Obstructive emphysema resulting from air trapped in the lungs

      4) Wide variance of age at onset and severity of symptoms; generally the earlier the onset, the more severe the disease

      5) Objective symptoms including chronic cough with vomiting, dyspnea, wheezing, and cyanosis

   b. Complications

      1) Widespread pulmonary infection

      2) Obstructive emphysema

      3) Atelectasis

INFORMATION SHEET

4) Secondary staphylococcus infection causing additional thickening of mucous secretions

5) Fibrosis of lung tissue

6) Lung abscesses

7) Bronchiectasis

8) Severe respiratory insufficiency

C. Treatment

1. Antibiotics as indicated for acute infections
2. Medication by mask or tent to relieve dyspnea, to thin respiratory secretions, and to aid expectoration
3. Humidification
4. Postural drainage with chest clapping
5. High caloric diet with added salty foods
6. Digestive enzymes
7. Vitamin supplement
8. Salt tablets in hot weather

D. Nursing responsibilities

1. Assist with humidification, nebulization, oxygen therapy, and other treatments
2. Force fluids to aid in thinning secretions
3. Observe child closely for amount of secretions
4. Monitor vital signs
5. Observe the patient's reaction to therapy, the amount and character of respiratory distress, cough, skin color, and degree of restlessness
6. Assist with use and maintenance of equipment
7. Maintain asepsis by proper use and care of equipment

INFORMATION SHEET

8. Assist the physical therapist as indicated; learn how to do the treatment if it is part of the nursing responsibility
9. Provide opportunities for physical activity
10. Protect the child from contact with persons who have infections
11. Check to see that childhood immunizations and boosters are given
12. Maintain adequate nutrition
    a. Assist and encourage the child to eat
    b. Offer small, attractive servings of food
    c. Permit food preferences when possible
    d. Feed slowly to avoid coughing, dyspnea, choking, and vomiting
    e. Provide companionship during mealtime
    f. Observe intake, food refused, and the type, character, and amount of vomiting, if any
13. Provide proper skin care
    a. Cleanse as needed with particular attention to perineal and rectal area
    b. Apply ointment to rectal area
    c. Expose buttocks to air or heat to prevent or heal a rash
    d. Prevent pressure areas
14. Change position frequently
15. Shampoo hair regularly
16. Provide mouth care frequently and always following postural drainage
17. Instruct the parents in the procedures and care of the child

INFORMATION SHEET

18. Provide emotional support

19. Be aware of agencies in the community which will offer financial and educational assistance

    (NOTE: A local chapter of the National Cystic Fibrosis Research Foundation will assist with needed supplies and medications.)

XIII. Battered child syndrome

A. Characteristics of the parents

1. Member of any socioeconomic level
2. Emotionally immature
3. Frustrated
4. Unresponsive or evasive when questioned
5. Abused as a child
6. Unconcerned about the child
7. Hostile and aggressive
8. Inconsistent in relating how injury ocurred

B. Characteristics of the child

1. Malnourished
2. Usually under three years of age
3. Abnormal uncleanliness
4. Withdrawn; cringes when touched or approached
5. Multiple injuries such as bruises, lesions, fractures, or missing teeth
6. Easily frightened or distressed
7. Other siblings treated with care and affection

C. Most common injuries

1. Active abuse

INFORMATION SHEET

a. Soft tissue injuries such as bruises, lacerations, burns, or brain injuries

b. Fractures of the long bones, ribs, or skull; x-rays may reveal various stages of healing

2. Passive abuse

a. Poor or inadequate nutrition

b. Physical neglect; delayed growth and development

c. Emotional or moral deprivation or rejection

D. Legal responsibilities

1. All 50 states have expanded their laws to protect physically abused and neglected children

2. Law provides immunity for the physician and/or the nurse from criminal or civil action

3. In Oklahoma, persons who fail to report incidents of suspected abuse or neglect may be guilty of committing a misdemeanor

4. If the situation cannot be alleviated, the court may remove the child from the custody of the abusers

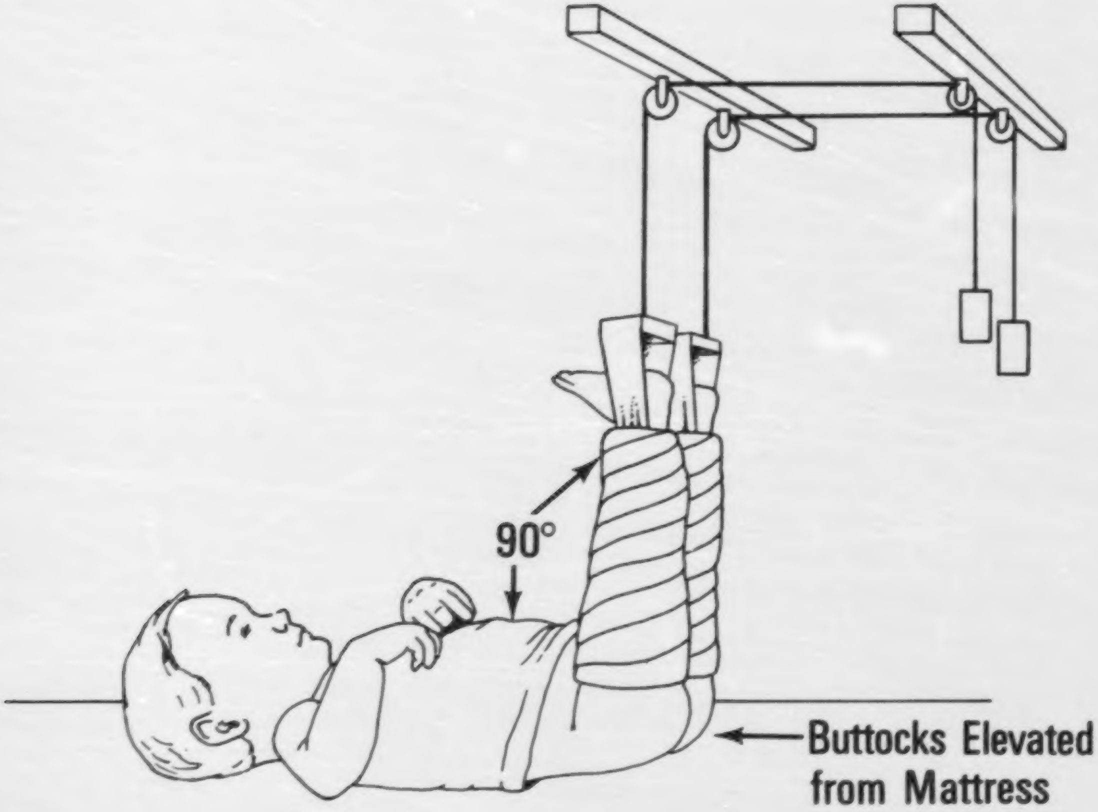
E. Nursing responsibilities

1. Provide emotional and physical support by giving tender, loving care

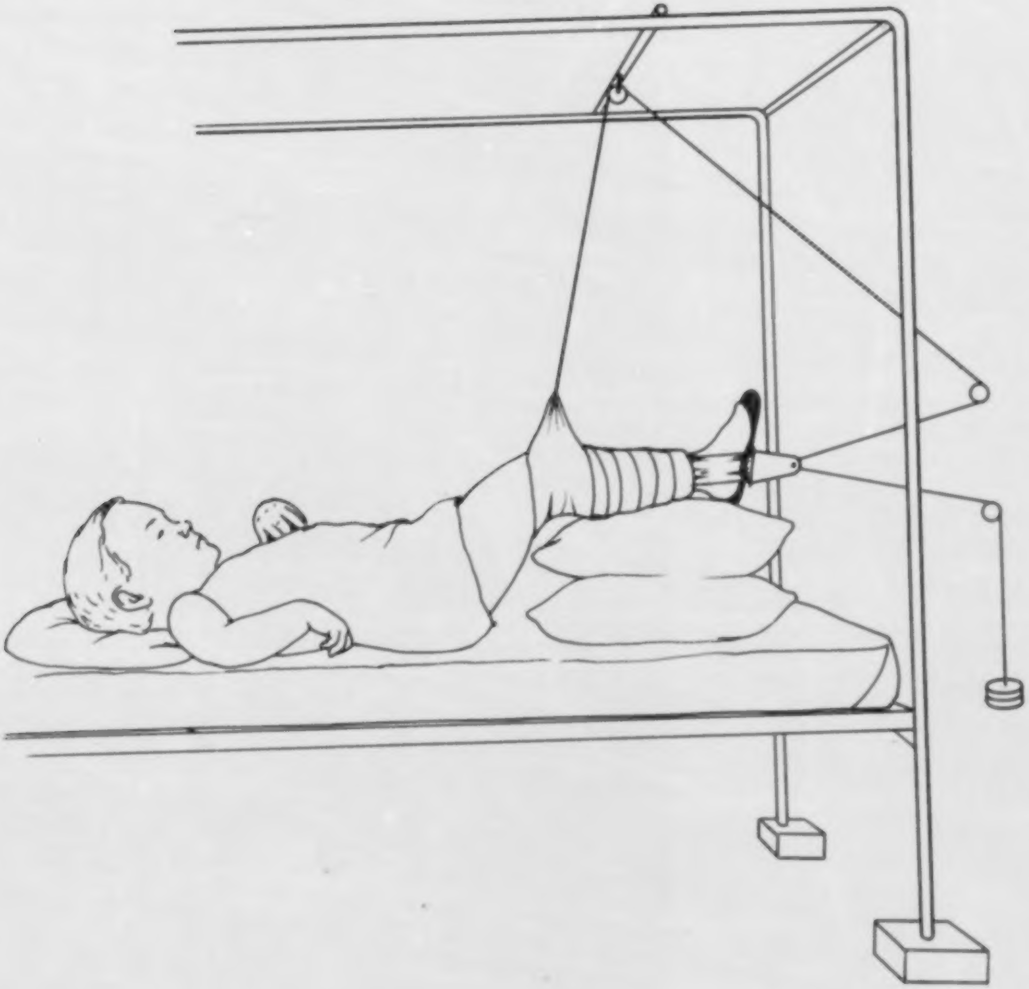
2. Observe carefully and report accurately any signs and symptoms of child abuse

3. Know how to contact agencies or organizations offering assistance for the child and the abusers

Bryant's Traction


90°
Buttocks Elevated from Mattress

Russell Traction



TM 2

CARING FOR THE HOSPITALIZED TODDLER
UNIT V

TEST

1. Match the terms on the right to the correct definition. (Answers from "a" through "j" will be found on this page.)

_____a. Disorders arising from a malfunction of motor centers and nerve pathways in the brain

_____b. Involuntary movements characterized by recurrent, slow, wormlike, and more or less continual change of position of the fingers, toes, hands, feet, and other parts of the body; a form of cerebral palsy

_____c. Hypertension of muscles causing stiff and awkward movements

_____d. Spasmodic alteration of contraction and relaxation

_____e. Tendency for the legs to cross on standing or lying due to spasm

_____f. Incoordination of voluntary muscular action, particularly of the muscle groups used in activities such as walking or reaching for objects

_____g. Pertaining to the sense of perception of movement, weight, resistance, and position

_____h. Condition of the upper respiratory pathway with acute inflammation and/or spasm of the pharynx, larynx, and trachea

_____i. Harsh, high-pitched sound produced during respiration

_____j. Acute inflammation of the bronchi due to infections or irritant agents

1. Kinesthetic
2. Stridor
3. Croup
4. Cerebral palsy
5. Acute bronchitis
6. Clonus
7. Scissoring
8. Athetosis
9. Ataxia
10. Spasticity

(Answers for "k" through "x" will be found on this page.)

______k. Small sweat gland

______l. Generalized, heritable disease of unknown etiology associated with dysfunction of exocrine and eccrine glands, including mucus-producing glands

______m. Inflammation of the lungs associated with exudate in the alveoli

______n. Space between the cells

______o. Inflammation of the lungs in which the exudate is primarily interstitial

______p. Pneumonia involving one or more lobes of the lungs

______q. Pulmonary inflammation concentrated about the bronchi

______r. Pneumonia due to aspiration of an oily substance such as kerosene, mineral oil, cod-liver oil, or ointment

______s. Excessive drawing in of the muscles attached to the sternum during inspiration

______t. Kidney disease in which there is a malfunction of the tissue without inflammation

______u. Instrument with a triangular tip and a hollow cannula used to puncture a body cavity for withdrawal of fluid

______v. Withdrawal of fluid from a cavity by means of a hollow needle or trocar

______w. Accumulation of serous fluid in the peritoneal cavity

______x. Permanent dilatation of one or more bronchi, usually due to bronchial obstruction and infection

11. Cystic fibrosis
12. Paracentesis
13. Eccrine gland
14. Sternal retraction
15. Bronchiectasis
16. Interstitial
17. Lipid pneumonia
18. Ascites
19. Lobar pneumonia
20. Bronchial pneumonia
21. Pneumonia
22. Nephrosis
23. Pneumonitis
24. Trocar

2. List eight guidelines in caring for the hospitalized toddler.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

3. Discuss cerebral palsy.

   a. Etiology

   b. Symptoms

      1) Athetoid

      2) Spastic

      3) Ataxic

      4) Rigid

   c. Treatment

d. Nursing responsibilities

4. List the following factors concerning fractures.

a. Major causes

1)

2)

b. Symptoms

1)

2)

3)

4)

c. Most common locations and their treatment

1)

2)

3)

5. Discuss nursing responsibilities before and after reduction of fractures.

a. Before reduction

b. After reduction

6. Discuss head injuries.

   a. Types

   b. Etiology

   c. Symptoms

   d. Treatment

   e. Nursing responsibilities

7. Describe pinworm and its treatment.

   a. Description

   b. Symptoms

c. Treatment

d. Nursing responsibilities

8. Discuss croup or spasmodic laryngitis.

a. Etiology

b. Symptoms

c. Treatment

d. Nursing responsibilities

9. Discuss acute bronchitis.

a. Etiology

b. Symptoms

c. Treatment

d. Nursing responsibilities

10. Discuss pneumonia or pneumonitis.

a. Types

1)

2)

3)

4)

5)

6)

b. Symptoms

c. Treatment

d. Nursing responsibilities

11. Describe nephrosis.

a. Symptoms

b. Treatment

c. Nursing responsibilities

12. Discuss cystic fibrosis or mucoviscidosis.

a. Incidence

b. Types of involvement

1) Meconium ileus

a) Symptoms

b) Complications

2) Obstruction of the pancreatic ducts

a) Symptoms

b) Complications

3) Pulmonary involvement

   a) Symptoms

   b) Complications

c. Treatment

d. Nursing responsibilities

13. Discuss the battered child syndrome.
    a. Characteristics of the parents
    b. Characteristics of the child
    c. Most common injuries
        1) Active abuse
        2) Passive abuse
    d. Legal responsibilities
    e. Nursing responsibilities

CARING FOR THE HOSPITALIZED TODDLER
UNIT V

ANSWERS TO TEST

1. a. 4
   b. 8
   c. 10
   d. 6
   e. 7
   f. 9
   g. 1
   h. 3
   i. 2
   j. 5
   k. 13
   l. 11
   m. 21
   n. 16
   o. 23
   p. 19
   q. 20
   r. 17
   s. 14
   t. 22
   u. 24
   v. 12
   w. 18
   x. 15

2. Any eight of the following:

   a. Obtain personal history information from parents; permit child to continue accustomed activity such as using toilet chair, taking bottle, or using nightlight at bedtime

   b. Assign one person to care for the child and work with the parents

   c. Permit parents to participate in child's care and to remain with the child

   d. Assist the parents to leave the child; instruct them to indicate when they will return in relation to the child's activities

   e. Ask parents to leave a personal article or favorite toy to reassure the child

   f. Permit child to examine equipment that is to be used in care or treatment

   g. Tell the child about treatment or surgery a short time before it is to be performed

   h. Be truthful about hurting

   i. Do not imply a choice when none is possible

j. Allow opportunity for the parents to express their feelings and fears or to ask questions

k. Avoid discussing the child within hearing; assume that the child can comprehend what is being said

3. Discussion should include:

a. Etiology

1) Birth injuries

2) Anoxia

3) Subdural hemorrhage

4) Infections such as meningitis or encephalitis

5) Kernicterus

6) Prenatal infections

b. Types of cerebral palsy and their symptoms

1) Athetoid

a) Involuntary uncoordinated movement

b) Varying degrees of muscle tension

c) Purposeless movements which increase whenever voluntary movement is attempted

2) Spastic

a) Tension in certain muscle groups

b) Increased activity of deep tendon reflexes

c) Clonus

d) Muscle contractures

e) Scissoring of lower extremities

3) Ataxic

a) Lack of coordination

b) Disturbed kinesthetic and balance senses

4) Rigid--Stiff, unyielding posture

c. Treatment

1) Early diagnosis

2) Splints or braces to prevent contractures

3) Orthopedic surgery

d. Nursing responsibilities

1) Provide proper skin care to prevent pressure or friction sores

2) Keep bedclothes clean, dry, and wrinkle-free

3) Encourage the child to do as much as possible even when it takes longer

4) Maintain good posture for the child in bed

5) Feed the child slowly to prevent undue stress and possible aspiration; permit child to feed self as able

6) Provide for play activity alone and with others

7) Provide for frequent rest periods

8) Assist as indicated in providing physical therapy and educational opportunities

9) Provide emotional support for the child and parents; encourage association with others having similar problems

4. a. Major causes--Any two of the following:

1) Falls from high chair, crib, or other high places

2) Automobile accident

3) Rolling off bed or flat surface

4) Battered child syndrome

b. Symptoms--Any four of the follwoing:

1) Pain

2) Tenderness on movement

3) Swelling

4) Discoloration

5) Obvious deformity or change in shape or size

6) Inability to bear weight or use affected limb

7) Numbness

c. Most common locations and their treatment

1) Femur

a) Bryant's traction

b) Russell traction

c) Body cast

2) Clavicle--Figure-of-eight bandage for shoulder immobilization

3) Humerus or elbow

a) Hanging cast

b) Bandage

c) Arm traction

5. Discussion should include:

a. Before reduction

1) Remove clothing gently from unaffected parts and then from injured part

2) Cut clothes off if necessary

3) Avoid moving the injured part

4) Prepare for x-rays, traction, or other treatment as directed by the physician

b. After reduction

1) Maintain correct position when Bryant's traction is used

a) Legs are suspended at right angles to the body

b) Buttocks are raised off mattress slightly

c) Upper body is restrained with a jacket as necessary to maintain position

- d) Weights must hang free providing continuous traction
- 2) Maintain position as prescribed when other treatment is used
- 3) Check toes frequently for changes in color, temperature, and feeling; report any cyanosis, numbness, or irritation
- 4) Provide skin care
  - a) Bathe exposed areas daily and as needed
  - b) Rub back and buttocks frequently
  - c) Keep linens clean, dry, and free of wrinkles or crumbs
- 5) Provide warmth as needed
- 6) Encourage child to exercise unaffected extremities
- 7) Change position as indicated
- 8) Provide diet high in roughage and fluids
- 9) Provide emotional support
  - a) Encourage parents to participate in care
  - b) Expect and permit behavior regression
  - c) Permit child to do things for self as possible
  - d) Provide diversions to stimulate physical and mental development

6. Discussion should include:
   - a. Types
     - 1) Concussion
     - 2) Skull fracture
     - 3) Subdural hematoma
   - b. Etiology
     - 1) Blow to the head
     - 2) Severe fall
     - 3) Automobile accident

c. Symptoms

1) Headache

2) Swelling at site

3) Drowsiness

4) Change in pulse rate or blood pressure

5) Eye signs such as blurred vision, inequality of pupils, or nystagmus

6) Vomiting

7) Unconsciousness

d. Treatment

1) Observation

2) Skull x-rays

e. Nursing responsibilities

1) Check vital signs frequently; report any significant changes

2) Observe for drowsiness, blurred vision, vomiting, pallor, shock, and unconsciousness

3) Observe the patient's eyes for equality of pupils

4) Awaken the patient periodically to be sure he/she is not comatose

5) Keep patient quiet

6) Maintain patent airway

7) Elevate head slightly unless contraindicated

7. Description should include:

a. Description

1) Is most common type affecting humans

2) Resembles a thin white thread about one-third inch long

3) Lays eggs around the anal opening

4) Infects child who handles contaminated toys or linens

5) Enters intestinal tract through the mouth

b. Symptoms

1) Itching in anal area

2) Irritability and restlessness

3) Weight loss

4) Poor appetite

5) Fretfulness during the night

c. Treatment

1) Pinworm diagnostic tape test

2) Anthelmintic such as Antepar

3) Oil and/or cleansing saline enemas

4) Rectal ointments

d. Nursing responsibilities

1) Observe linen and stool precautions for infected feces

2) Sterilize bedpan following each use

3) Teach child to wash hands well after each defecation

4) Keep child's fingernails short

5) Apply rectal ointments as prescribed

6) Instruct parents in treatment of other family members

8. Discussion should include:

a. Etiology

1) Smaller air passages cause greater incidence and seriousness of respiratory distress

2) Acute laryngitis

3) Variety of infectious organisms

b. Symptoms

1) Hoarse cough

2) Dyspnea

3) Sudden onset during the night, often without earlier symptoms

4) Inspiration difficult and accompanied by stridor

5) Expiration normal

6) Duration of few hours usually

7) Usually less severe on recurring nights

8) Seldom fatal

9) Not communicable

c. Treatment

1) Emetic to induce vomiting which helps reduce the laryngeal spasm

2) Sedative, such as phenobarbital, after vomiting

3) Croup tent or moist inhalations to increase humidity

d. Nursing responsibilities

1) Remain with the child until the emetic has induced vomiting

2) Explain the croup tent or croupette to the child and parents when one is to be used

3) Change position frequently to help avoid complications

4) Observe vital signs, particularly rate and character of respirations

5) Observe for color, restlessness, and anxiety

6) Report any increase in respiratory difficulty

7) Reassure the child and parents; fear and apprehension may increase respiratory distress

9. Discussion should include:

a. Etiology

1) Occurs as a secondary infection

2) Is caused by a variety of organisms

3) May be precipitated by poor nutrition, allergy, or chronic respiratory infection

4) May be a familial tendency

b. Symptoms

1) Dry cough which becomes looser as disease continues

2) Secretion of large amounts of sputum which may be aspirated into the trachea and bronchi

3) Vomiting

4) Moderate fever, usually under 102°F (39°C)

5) Complaint of dry throat or sore chest

6) Less frequent occurrence after age of four

c. Treatment

1) Antipyretics and antibiotics

2) Increased humidity

3) Nose drops

4) Examination for possible complications or contributing conditions such as infected tonsils or adenoids, cystic fibrosis, allergy, tuberculosis, or other disorders

d. Nursing responsibilities

1) Increase humidity to aid in loosening secretions

2) Plan nursing care to provide adequate rest

3) Elevate upper part of child's body to facilitate breathing

4) Clean nose PRN, especially before administering food or medication

5) Monitor intake and output; provide adequate intake to aid excretion of aspirin

6) Administer food, fluids, and medications slowly to allow adequate time for breathing between swallows

7) Monitor vital signs

8) Observe respirations for dyspnea, mouth breathing, flaring of the nostrils, sternal retractions, and stridor; note type and amount of coughing

9) Observe skin, mucous membranes, and fingernails for color

10) Note general behavior of child and record such symptoms as restlessness, listlessness, irritability, apathy, or contentment

11) Provide emotional support

   a) Hold child when possible

   b) Pat or touch child when holding is not possible

   c) Provide audio and visual stimulation

   d) Reassure parents; permit them to assist with care of child

10. Discussion should include:

a. Types--Any six of the following:

   1) Bacterial

   2) Viral

   3) Lobar

   4) Bronchial

   5) Aspiration

   6) Lipid

   7) Hypostatic

   8) Primary

   9) Secondary

b. Symptoms

   1) Influenced by age and causative organism

   2) Onset sudden or preceded by upper respiratory infection

   3) Dry cough that gradually becomes productive

   4) High fever 103° to 104°F (39.5° to 40°C) with wide fluctuations during a 24-hour period

   5) Increased respiratory rate 40 to 80 per minute in infants, 30 to 50 per minute in children

   6) Shallow respirations due to chest pain

7) Sternal retraction present as respirations become difficult

8) Listlessness

9) Anorexia

10) Tendency to lie on affected side

c. Treatment

1) Complete physical examination including blood and urine tests and x-rays

2) Cultures of nose and throat to identify causative organism

3) Antibiotics or sulfonamides

4) Antipyretics

5) Oxygen as indicated

6) Analgesics as needed

d. Nursing responsibilities

1) Isolate child as indicated

2) Administer oxygen and increase humidity as prescribed

3) Provide for adequate rest by careful planning of care and treatment

4) Monitor vital signs, character, type, and frequency of cough

5) Give tepid sponges as prescribed to reduce fever

6) Encourage fluid intake; offer small amounts frequently

7) Assist with parenteral fluids if vomiting persists

8) Observe intake and output; adequate fluid intake is necessary to aid in excretion of sulfonamides and toxic substances

9) Turn regularly to aid in preventing complications

10) Provide for proper disposal of tissues

11) Observe for unfavorable symptoms such as weak rapid pulse, cyanosis, abdominal distention, constipation, and disorientation

11. Description should include:

    a. Symptoms

        1) Edema about the eyes and ankles and gradually becoming generalized

        2) Weight gain due to edema

        3) Distended abdomen

        4) Pallor

        5) Irritability

        6) Listlessness

        7) Poor appetite

        8) Albuminuria

        9) Vomiting

        10) Diarrhea

        11) Hypoproteinemia

        12) Hypercholesteremia

    b. Treatment

        1) Control of edema with diuretics or hormone therapy

        2) High protein diet

        3) Abdominal paracentesis for removal of ascites

        4) Home care of child with special therapy in a hospital

    c. Nursing responsibilities

        1) Provide good skin care with special attention to any folds which may retain moisture

        2) Handle gently to avoid injury to the skin

        3) Provide support for edematous male genitals

        4) Separate skin surfaces with pads of cotton or soft cloth

        5) Change position frequently to prevent respiratory infection

6) Elevate head at intervals to aid in periodic reduction of edema of eyelids

7) Cleanse eyes frequently

8) Provide small, attractive servings of food

9) Encourage child to eat

10) Measure abdomen as prescribed

11) Maintain intake and output; instruct parents and child how to assist in keeping intake and output accurately

12) Estimate amount of output if child is not toilet-trained by noting amount and frequency of voidings

13) Observe character, odor, and color of urine

14) Weigh two or three times per week to determine changes in edema

15) Prevent exposure to other infections, particularly respiratory

16) Maintain aseptic technique

17) Check vital signs regularly; report elevations

18) Provide emotional support

12. Discussion should include:

a. Incidence

1) Occurs in one of every 2000 live births in Caucasians

2) Occurs less frequently in other races

3) Is inherited as a recessive trait

4) Is the most common serious chronic condition in children

b. Types of involvement

1) Meconium ileus

a) Symptoms

(1) Evident very soon after birth

(2) Very thick, sticky meconium due to absence or marked decrease of pancreatic enzymes

(3) Fibrocystic involvement in five to ten percent of all cases

b) Complications

(1) Complete obstruction of the small intestine requiring immediate surgery

(2) High mortality rate

(3) Other manifestations of the disease following surgery

2) Obstruction of the pancreatic ducts

a) Symptoms

(1) Absent or diminished output of pancreatic juices

(2) Intestinal malabsorption

(3) Bulky, greasy, foamy, light-colored, foul-smelling stools

b) Complications

(1) Severe malnutrition

(2) Rectal prolapse

3) Pulmonary involvement

a) Symptoms

(1) Thickened mucus causing obstruction of the air passages

(2) Expiration more difficult than inspiration

(3) Obstructive emphysema resulting from air trapped in the lungs

(4) Wide variance of age at onset and severity of symptoms; generally the earlier the onset, the more severe the disease

(5) Objective symptoms including chronic cough with vomiting, dyspnea, wheezing, and cyanosis

b) Complications

(1) Widespread pulmonary infection

(2) Obstructive emphysema

(3) Atelectasis

(4) Secondary staphylococcus infection causing 'ditional thickening of mucous secretions

(5) Fibrosis of lung tissue

(6) Lung abscesses

(7) Bronchiectasis

(8) Severe respiratory insufficiency

c. Treatment

1) Antibiotics as indicated for acute infections

2) Medication by mask or tent to relieve dyspnea, to thin respiratory secretions, and to aid expectoration

3) Humidification

4) Postural drainage with chest clapping

5) High caloric diet with added salty foods

6) Digestive enzymes

7) Vitamin supplement

8) Salt tablets in hot weather

d. Nursing responsibilities

1) Assist with humidification, nebulization, oxygen therapy, and other treatments

2) Force fluids to aid in thinning secretions

3) Observe child closely for amount of secretions

4) Monitor vital signs

5) Observe the patient's reaction to therapy, the amount and character of respiratory distress, cough, skin color, and degree of restlessness

6) Assist with use and maintenance of equipment

7) Maintain asepsis by proper use and care of equipment

8) Assist the physical therapist as indicated; learn how to do the treatment if it is part of the nursing responsibility

9) Provide opportunities for physical activity

10) Protect the child from contact with persons who have infections

11) Check to see that childhood immunizations and boosters are given

12) Maintain adequate nutrition

   a) Assist and encourage the child to eat

   b) Offer small, attractive servings of food

   c) Permit food preferences when possible

   d) Feed slowly to avoid coughing, dyspnea, choking, and vomiting

   e) Provide companionship during mealtime

   f) Observe intake, food refused, and the type, character, and amount of vomiting, if any

13) Provide proper skin care

   a) Cleanse as needed with particular attention to perineal and rectal area

   b) Apply ointment to rectal area

   c) Expose buttocks to air or heat to prevent or heal a rash

   d) Prevent pressure areas

14) Change position frequently

15) Shampoo hair regularly

16) Provide mouth care frequently and always following postural drainage

17) Instruct the parents in the procedures and care of the child

18) Provide emotional support

19) Be aware of agencies in the community which will offer financial and educational assistance

13. Discussion should include:

a. Characteristics of the parents

1) Member of any socioeconomic level

2) Emotionally immature

   3) Frustrated
   4) Unresponsive or evasive when questioned
   5) Abused as a child
   6) Unconcerned about the child
   7) Hostile and aggressive
   8) Inconsistent in relating how injury occurred

b. Characteristics of the child
   1) Malnourished
   2) Usually under three years of age
   3) Abnormal uncleanliness
   4) Withdrawn; cringes when touched or approached
   5) Multiple injuries such as bruises, lesions, fractures, or missing teeth
   6) Easily frightened or distressed
   7) Other siblings treated with care and affection

c. Most common injuries
   1) Active abuse
      a) Soft tissue injuries such as bruises, lacerations, burns, or brain injuries
      b) Fractures of the long bones, ribs, or skull; x-rays may reveal various stages of healing
   2) Passive abuse
      a) Poor or inadequate nutrition
      b) Physical neglect; delayed growth and development
      c) Emotional or moral deprivation or rejection

d. Legal responsibilities
   1) All 50 states have expanded their laws to protect physically abused and neglected children
   2) Law provides immunity for the physician and/or the nurse from criminal or civil action

   3) In Oklahoma, persons who fail to report incidents of suspected abuse or neglect may be guilty of committing a misdemeanor

   4) If the situation cannot be alleviated, the court may remove the child from the custody of the abusers

e. Nursing responsibilities

   1) Provide emotional and physical support by giving tender, loving care

   2) Observe carefully and report accurately any signs and symptoms of child abuse

   3) Know how to contact agencies or organizations offering assistance for the child and the abusers

GROWTH AND DEVELOPMENT OF THE PRESCHOOL CHILD
UNIT VI

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list characteristics, behaviors, and skills of the child from three through five years of age and write a report on a child care facility. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with this unit to the correct definitions.
2. List eight general characteristics of the preschool child.
3. List eight physical skills and behaviors of the "trusting threes."
4. List ten physical skills and behaviors of the "frustrating fours."
5. List eight physical skills and behaviors of the "fascinating fives."
6. Discuss discipline and guidance of the preschool child.
7. Discuss the use of undesirable language.
8. Discuss jealousy
9. Discuss nursery schools and day care centers, giving some factors to consider in selecting one.
10. Write a report on a child care facility.

GROWTH AND DEVELOPMENT OF THE PRESCHOOL CHILD
UNIT VI

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information sheet.

   C. Discuss terminal and specific objectives.

   D. Discuss information and assignment sheets.

   E. Visit a child care facility other than the clinical affiliation, such as a nursery school, day care center, or facility which provides care for the exceptional child.

   F. Have student make a list of toys suitable for a preschool child.

   G. Give test.

II. Student:

   A. Read objective sheet.

   B. Study information sheet.

   C. Participate in discussion.

   D. Complete assignment sheet.

   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Assignment Sheet #1--Report on a Child Care Facility

D. Test

E. Answers to test

II. References:

A. Baker, Katherine R., and Xenia F. Fane. *Understanding and Guiding Young Children.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1971.

B. Brisbane, Holly E., and Audrey P. Riker. *The Developing Child.* Peoria, Illinois: Chas. A. Bennett Company, Inc., 1971.

C. Broadribb, Violet, and Charlotte Corliss. *Maternal-Child Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1971.

D. Ingalls, A. Joy, and M. Constance Salerno. *Maternal and Child Health Nursing.* St. Louis, Missouri: The C. V. Mosby Company, 1971.

E. Petrillo, Madeline, and Sirgay Sanger. *Emotional Care of Hospitalized Children.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1972.

F. Thompson, Eleanor D. *Pediatrics for Practical Nurses.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1970.

III. Other materials:

A. Films

1. "Before We Are Six." National Society for the Prevention of Blindness, 79 Madison Avenue, New York 10019.

2. "Betty Sees a Bird." National Society for the Prevention of Blindness.

3. "Care of the Young Retarded Child." International Film Bureau, 322 South Michigan Avenue, Chicago, Illinois 60604.

4. "Crossroads at Four." National Society for the Prevention of Blindness.

5. "Frustrating Fours and Fascinating Fives." McGraw-Hill Films.

6. "One Day's Poison." McGraw-Hill Films.

(NOTE: These films are available to Oklahoma instructors from the Oklahoma State Department of Health.)

B. Filmstrip--"Prevention of Accidents to Children." Medical Electronic Educational Services.

C. Booklets

1. *Looking for Health.* Metropolitan Life Insurance Company.

2. *Watching Your Child's Health.* Metropolitan Life Insurance Company.

D. Pamphlets--Pierre the Pelican Series. Family Publications Center, P.O. Box 15690, New Orleans, Louisiana 70115.

1. No. 21. *Three Years.*
2. No. 22. *Three Years and Four Months.*
3. No. 23. *Three Years and Eight Months.*
4. No. 24. *Four Years.*
5. No. 25. *Four Years and Six Months.*
6. No. 26. *Five Years.*
7. No. 27. *Five and a Half Years.*

GROWTH AND DEVELOPMENT OF THE PRESCHOOL CHILD
UNIT VI

INFORMATION SHEET

I. Terms and definitions

   A. Discipline--Process of training and learning

   B. Guidance--Providing for discipline and learning experiences to aid in optimum growth and development

   C. Parallel play--Playing near other children but not with them

   D. Nursery school--Facility to provide learning experiences for a few hours one or more days per week

   E. Day care center--Facility to provide care for children for all day or several hours a day; primarily for children of working parents

   F. Enuresis--Urinary incontinence after the age when urethral sphincter control can normally be expected

II. General characteristics of the preschool child

   A. Is age three to six years

   B. Develops the sense of initiative

   C. Has become fairly independent

   D. Gains weight more slowly, height gain is faster

   E. Gains about five pounds per year

   F. Changes from a chubby toddler to a thinner preschooler

   G. Loses interest in food as activities keep him/her occupied; will have increased appetite in latter part of period

   H. Experiences less frustration as motor skills and coordination increase

   I. Feels more secure in the world; adjusts more easily to mother's absence

   J. Learns to play with others; begins to share belongings

   K. Postpones bedtime and resists taking naps

   L. Needs firm guidance to avoid overtiring and/or injury

INFORMATION SHEET

M. Becomes increasingly curious and observant

N. Constructs sentences and enjoys conversing and trying new words

O. Is constantly active and alert

III. Physical skills and behaviors of the "trusting threes"

A. Can go upstairs alone using feet alternately while holding onto another's hand or the handrail

B. Runs and jumps well

C. Can pedal a tricycle

D. Uses eating utensils well; seldom spills

E. Strings beads and puts simple puzzles together

F. Builds a tower of eight or ten blocks

G. Draws a circle and simple pictures

H. Learns to wash hands, brush teeth, and assist with bath

I. Dresses self; needs help with buttons and other fasteners

J. Begins to sleep through the night without wetting; attends to own toilet needs with little help or prompting

K. Helps with simple tasks

L. Shows sense of belonging to a family by wanting to help with various activities

IV. Physical skills and behaviors of the "frustrating fours"

A. Adapts more easily to change of routine

B. Is less willing to do as told; initiates activities and is adventurous

C. Is developing great imagination and may not make a clear distinction between reality and fantasy

D. Has increased self-confidence

E. Can walk backwards and can go upstairs without holding onto the handrail

INFORMATION SHEET

F. Can use scissors and draw a circle and a square

G. Can manage dressing alone and fastens large buttons

H. May have an imaginary playmate

I. Begins to experience fears such as fear of injury, the dark, animals, and strangers

J. Enjoys simple toys and play with things which stimulate imagination and pretending

K. Becomes aware of sexual difference but may prefer playmates of the same sex

L. May begin to wonder and question about death and dying

M. Enjoys dressing up in adult clothing and imitating adult activities

N. Begins to show off and want own way

O. Plays most of the time with others but prefers parallel play at times

V. Physical skills and behaviors of the "fascinating fives"

A. Becomes ready to join the larger world outside the family

B. Rides a tricycle well; jumps rope

C. Can play games controlled by rules; may help make up rules for games

D. Becomes less fearful and more sure of self and ability

E. Begins to lose deciduous teeth

F. Knows the difference between pieces of money such as a penny and a nickel

G. Learns to print own name and other letters

H. Uses a hammer

I. Needs opportunity and encouragement to try and to succeed at new activities

J. Knows the primary colors and likes to use color in making pictures

K. Has a longer attention span and increasingly completes simple tasks and projects

INFORMATION SHEET

L. Plays well with others of the same age; feels protective toward younger children

M. Enjoys stories, particularly those about self

VI. Discipline and guidance

A. Be consistent

B. Give directions and answer questions simply

C. Offer the child a choice only when a choice is possible

D. Give suggestions and directions in a positive way; avoid too many negative directions

E. Allow time for the child to finish play when possible

F. Make desirable behavior interesting by positive suggestions

Example: Suggest delivering the toys to the toybox rather than ordering him/her to pick them up

G. Encourage the child to be independent and to assume responsibility for behavior

H. Provide materials for creative activity and self-expression

I. Motivate through attention, approval, and compliments

J. Expect less desirable behavior when others are present or when pressures are greater

K. Inform the child in advance of expected behavior

VII. Use of undesirable language

A. Preschoolers are very imitative and quickly pick up new terms

B. Swearing has little significance because the child does not comprehend what he/she is saying; disapproval should be mildly expressed

VIII. Jealousy

A. Is a normal reaction to actual, supposed, or threatened loss of affection

B. Results from insecurity, which all persons feel in varying degrees

C. Is shown in various ways such as regressing in learned behavior, becoming aggressive toward the source person, or deliberately misbehaving to gain attention

INFORMATION SHEET

D. Can be minimized

1. Prepare the child for the birth of a new infant
2. Give added attention
3. Substitute a new activity
4. Encourage sharing

IX. Nursery schools and day care centers

A. A good nursery school or day care center provides plenty of room for vigorous, active play and sturdy toys which are easy to manipulate and designed to fit the child

B. Sharing toys in a nursery school or day care center is usually easier for a child than sharing own toys

C. The child may be able to express both negative and positive feelings more easily with nursery school or day care personnel since emotional involvement is less

D. The purpose of the nursery school or day care center is to acquaint the child with the social world rather than to teach many new skills

E. Various factors should be considered in selection and evaluation of a nursery school or day care center

1. Number of teachers and helpers
2. Educational background of teachers and helpers
3. Physical facilities
4. Cost per child

F. Nursery school is usually a good preparation for beginning school, providing varied experiences for the child

1. Separation from the family for short periods of time
2. Association with peers in a structured setting
3. Exposure to varied ways of learning and behaving

GROWTH AND DEVELOPMENT OF THE PRESCHOOL CHILD
UNIT VI

ASSIGNMENT SHEET #1--REPORT ON A CHILD CARE FACILITY

When you visit a child care facility, observe for the following characteristics. Write a brief report of your findings and impressions.

1. Facilities and care
   - a. Physical facilities, including cleanliness
   - b. Policies concerning infections or illness
   - c. Adequate space for play
   - d. Provision for rest separate from play area
   - e. Variety of toys and play equipment
   - f. Meals or snacks provided
   - g. Time and space for solitary play
   - h. Supervised play with others
   - i. Outdoor play area
   - j. Children appear contented
   - k. Children not left in cribs and playpens for long periods
   - l. Toilet training
   - m. Age groups separated
   - n. Individual storage for each child
   - o. Adequate supervision of children
   - p. Number of children per worker
2. Personnel
   - a. Educational preparation for the job
   - b. Concern for children
   - c. Clean, neat appearance

GROWTH AND DEVELOPMENT OF THE PRESCHOOL CHILD
UNIT VI

TEST

1. Match the terms on the right to the correct definition.

______a. Providing for discipline and learning experiences to aid in optimum growth and development

______b. Process of training and learning

______c. Playing near other children but not with them

______d. Facility to provide learning experiences for a few hours one or more days per week

______e. Facility to provide care for children for all day or several hours a day; primarily for children of working parents

______f. Urinary incontinence after the age when urethral sphincter control can normally be expected

1. Nursery school
2. Enuresis
3. Day care center
4. Parallel play
5. Discipline
6. Guidance

2. List eight general characteristics of the preschool child.

a.

b.

c.

d.

e.

f.

g.

h.

3. List eight physical skills and behaviors of the "trusting threes."

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h

4. List ten physical skills and behaviors of the "frustrating fours."

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

   i.

   j.

5. List eight physical skills and behaviors of the "fascinating fives."

   a.

   b.

   c.

   d.

   e.

f.

g.

h.

6. Discuss discipline and guidance of the preschool child.

7. Discuss the use of undesirable language.

8. Discuss jealousy.

9. Discuss nursery schools and day care centers, giving some factors to consider in selecting one.

10. Write a report on a child care facility.

(NOTE: If this has not been accomplished prior to the test, ask the instructor when the above activity should be completed.)

GROWTH AND DEVELOPMENT OF THE PRESCHOOL CHILD
UNIT VI

ANSWERS TO TEST

1. a. 6
   b. 5
   c. 4
   d. 1
   e. 3
   f. 2

2. Any eight of the following:
   a. Is age three to six years
   b. Develops the sense of initiative
   c. Has become fairly independent
   d. Gains weight more slowly; height gain is faster
   e. Gains about five pounds per year
   f. Changes from a chubby toddler to a thinner preschooler
   g. Loses interest in food as activities keep him/her occupied; will have increased appetite in latter part of period
   h. Experiences less frustration as motor skills and coordination increase
   i. Feels more secure in the world; adjusts more easily to mother's absence
   j. Learns to play with others; begins to share belongings
   k. Postpones bedtime and resists taking naps
   l. Needs firm guidance to avoid overtiring and/or injury
   m. Becomes increasingly curious and observant
   n. Constructs sentences and enjoys conversing and trying new words
   o. Is constantly active and alert

3. Any eight of the following:
   a. Can go upstairs alone using feet alternately while holding onto another's hand or the handrail
   b. Runs and jumps well

c. Can pedal a tricycle

d. Uses eating utensils well; seldom spills

e. Strings beads and puts simple puzzles together

f. Builds a tower of eight or ten blocks

g. Draws a circle and simple pictures

h. Learns to wash hands, brush teeth, and assist with bath

i. Dresses self; needs help with buttons and other fasteners

j. Begins to sleep through the night without wetting; attends to own toilet needs with little help or prompting

k. Helps with simple tasks

l. Shows sense of belonging to a family by wanting to help with various activities

4. Any ten of the following:

a. Adapts more easily to change of routine

b. Is less willing to do as told; initiates activities and is adventurous

c. Is developing great imagination and may not make a clear distinction between reality and fantasy

d. Has increased self-confidence

e. Can walk backwards and can go upstairs without holding onto the handrail

f. Can use scissors and draw a circle and a square

g. Can manage dressing alone and fastens large buttons

h. May have an imaginary playmate

i. Begins to experience fears such as fear of injury, the dark, animals, and strangers

j. Enjoys simple toys and play with things which stimulate imagination and pretending

k. Becomes aware of sexual difference but may prefer playmates of the same sex

l. May begin to wonder and question about death and dying

m. Enjoys dressing up in adult clothing and imitating adult activities

n. Begins to show off and want own way

o. Plays most of the time with others but prefers parallel play at times

5. Any eight of the following:

a. Becomes ready to join the larger world outside the family

b. Rides a tricycle well; jumps rope

c. Can play games controlled by rules; may help make up rules for games

d. Becomes less fearful and more sure of self and ability

e. Begins to lose deciduous teeth

f. Knows the difference between pieces of money such as a penny and a nickel

g. Learns to print own name and other letters

h. Uses a hammer

i. Needs opportunity and encouragement to try and to succeed at new activities

j. Knows the primary colors and likes to use color in making pictures

k. Has a longer attention span and increasingly completes simple tasks and projects

l. Plays well with others of the same age; feels protective toward younger children

m. Enjoys stories, particularly those about self

6. Discussion should include:

a. Be consistent

b. Give directions and answer questions simply

c. Offer the child a choice only when a choice is possible

d. Give suggestions and directions in a positive way; avoid too many negative directions

e. Allow time for the child to finish play when possible

f. Make desirable behavior interesting by positive suggestions

g. Encourage the child to be independent and to assume responsibility for behavior

   h. Provide materials for creative activity and self-expression

   i. Motivate through attention, approval, and compliments

   j. Expect less desirable behavior when others are present or when pressures are greater

   k. Inform the child in advance of expected behavior

7. Discussion should include:

   a. Preschoolers are very imitative and quickly pick up new terms

   b. Swearing has little significance because the child does not comprehend what he/she is saying; disapproval should be mildly expressed

8. Discussion should include:

   a. Is a normal reaction to actual, supposed, or threatened loss of affection

   b. Results from insecurity, which all persons feel in varying degrees

   c. Is shown in various ways such as regressing in learned behavior, becoming aggressive toward the source person, or deliberately misbehaving to gain attention

   d. Can be minimized

      1) Prepare the child for the birth of a new infant

      2) Give added attention

      3) Substitute a new activity

      4) Encourage sharing

9. Discussion should include:

   a. A good nursery school or day care center provides plenty of room for vigorous, active play and sturdy toys which are easy to manipulate and designed to fit the child

   b. Sharing toys in a nursery school or day care center is usually easier for a child than sharing own toys

   c. The child may be able to express both negative and positive feelings more easily with nursery school or day care personnel since emotional involvement is less

d. The purpose of the nursery school or day care center is to acquaint the child with the social world rather than to teach many new skills

e. Various factors should be considered in selection and evaluation of a nursery school or day care center

    1) Number of teachers and helpers

    2) Educational background of teachers and helpers

    3) Physical facilities

    4) Cost per child

f. Nursery school is usually a good preparation for beginning school, providing varied experiences for the child

    1) Separation from the family for short periods of time

    2) Association with peers in a structural setting

    3) Exposure to varied ways of learning and behaving

10. Evaluated to the satisfaction of the instructor.

CARING FOR THE HOSPITALIZED PRESCHOOL CHILD
UNIT VII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to discuss and describe various abnormal conditions of the preschool child which require hospitalization. The student should be able to complete a chart by naming a disease when given the various characteristics. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with this unit to the correct definitions.
2. Discuss preparation for hospitalization, nursing responsibilities on admission and during hospitalization, and preoperative care.
3. Discuss factors concerning tonsils and adenoids, including anatomy and physiology, symptoms of inflammation, complications, and treatment.
4. Discuss post-tonsillectomy care including postoperative nursing responsibilities, complications, and instructions to parents for home care.
5. Describe the incidence, anatomy and physiology, symptoms, treatment, and nursing responsibilities for asthma.
6. Discuss the anatomy and physiology, types, symptoms, treatment, and preoperative and postoperative responsibilities of strabismus.
7. Describe the incidence, anatomy and physiology, symptoms, prognosis, complications, treatment, and nursing responsibilities concerning acute glomerulonephritis.
8. Discuss etiology, types, symptoms, prognosis, treatment, and nursing responsibilities of leukemia.
9. Complete a chart by naming the disease when given the incubation period, mode of transmission, communicable period, symptoms, medical and nursing care, prevention, and immunity.

CARING FOR THE HOSPITALIZED PRESCHOOL CHILD
UNIT VII

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information sheet.

  C. Discuss terminal and specific objectives.

  D. Discuss information sheet.

  E. Review isolation technique.

  F. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Transparency #1--The Tonsils

  D. Test

  E. Answers to test

II. References:

  A. Brunner, Lillian S. et al. *The Lippincott Manual of Nursing Practice*. Philadelphia, Pennsylvania: J. B. Lippincott Company, 1974.

  B. Broadribb, Violet, and Charlotte Corliss. *Maternal-Child Nursing*. Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

C. Ingalls, A. Joy, and M. Constance Salerno. *Maternal and Child Health Nursing.* St. Louis, Missouri: The C. V. Mosby Company, 1971.

D. Jacob, Stanley W., and Clarice A. Francone. *Structure and Function in Man.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1965.

E. Thompson, Eleanor D. *Pediatrics for Practical Nurses.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1970.

III. Other materials:

A. Periodicals

1. Dewey, Jackie. "Eighteen Ways to Live with Asthma." *Nursing '75,* April.
2. Castle, Mary. "Isolation: Precise Procedures for Better Protection." *Nursing '75,* May.
3. Harlow, Melissa, and Marsha Brown. "Presto, Charlie Brown, You're in Pediatrics." *RN,* March 1974.
4. Luciano, Kathy. "The Who, When, Where, What, and How of Preparing Children for Surgery." *Nursing '74,* November.
5. Luciano, Kathy, and Claire J. Shumsky. "Pediatric Procedures: The Explanation Should Always Come First." *Nursing '75,* January.
6. Van Hattum, Rolland J. "Communication Disorders in Children." *Nursing '75,* March.

B. Films

1. "Cleared for Hearing." Oklahoma State Health Department.
2. "The Last Case of Polio." Lederle Laboratories.

C. Filmstrips

1. "Leukemia in Children." Medical Electronic Educational Services, Inc., 29423 West Six Mile Road, Livonia, Michigan 48152.
2. "Renal Diseases in Children." Medical Electronic Educational Services, Inc.
3. "Admission and Orientation of the Child." Trainex Corporation.
4. "Stephen Goes to the Hospital." Trainex Corporation.
5. "Cathy Has an Operation." Trainex Corporation.
6. "Parents and Their Ill Child." Trainex Corporation.
7. "Preparing the Child for Procedures." Trainex Corporation.

D. Chart--"Exanthematous Diseases of Infants and Children." Nursing Education Aids, no. 16. Ross Laboratories.

CARING FOR THE HOSPITALIZED PRESCHOOL CHILD
UNIT VII

INFORMATION SHEET

I. Terms and definitions

A. Glomerulonephritis--Acute or chronic inflammatory disease of the kidneys involving the glomeruli

B. Emphysema--Lung disorder characterized by abnormal enlargement of the alveoli

C. Asthma--Allergic condition affecting the bronchi; characterized by dyspnea, wheezing, and a sense of constriction of the chest

D. Status asthmaticus--Asthmatic crisis requiring intensive treatment; may be fatal

E. Strabismus--Failure of the two eyes to direct their gaze at the same object simultaneously; also called cross-eyes or squint

F. Diplopia--Double vision

G. Amblyopia--Dimness of vision due to disuse; lazy eye

H. Periorbital--Around the eye socket

I. Malaise--General feeling of illness or discomfort

J. Leukemia--Malignant disease of the tissues in the bone marrow, spleen, and lymph nodes characterized by uncontrolled production of the leukocytes

K. Mononucleosis--Infectious disorder in which there is an increase in the number of monocytes

L. Poliomyelitis--Virus disease characterized by upper respiratory and gastric symptoms which may progress to involve the central nervous system

M. Bulbar poliomyelitis--Poliomyelitis affecting chiefly the medulla and the pons; difficulty in swallowing and respiratory and circulatory distress may be evident

N. Tracheotomy--Incision of the trachea

O. Koplik's spots--Small red spots with gray white centers on the oral mucosa

P. Toxoid--Toxin treated with heat or chemical agent to destroy its toxicity without destroying its ability to stimulate antibody production

Q. Maculopapular--Consisting of macules or small reddened areas and papules or red elevated areas

INFORMATION SHEET

R. Vesicle--Small blister

S. Lymphadenopathy--Enlargement of the lymph nodes

II. Hospitalization

A. Preparation before hospitalization

1. Tell the child about going to the hospital
2. Explain what treatments and procedures may be done
3. Reassure the child that the parents will be present as much as possible
4. Permit the child to take a favorite toy or other object to the hospital
5. Answer questions simply and truthfully; encourage verbalization

B. Nursing responsibilities on admission

1. Call by name
2. Treat as an individual
3. Show around the unit or ward as appropriate
4. Give instructions about the call system
5. Permit the mother to assist with undressing
6. Explain procedures in simple terms

C. Nursing responsibilities during hospitalization

1. Provide a visible place fo the child to keep possessions
2. Adjust routines to enable the family to participate in the child's care
3. Permit the child to examine instruments and other equipment to be used
4. Have a familiar person accompany the child when taken to other departments for tests or treatments
5. Be aware that the child and the parents may be experiencing guilt feelings about the illness or injury

INFORMATION SHEET

    6. Expect regressions in behavior; reassure the child rather than scold
    7. Use play activity and story telling to explain procedures; encourage expression of fears and confusion
    8. Converse with the child
    9. Remember that parents need reassurance and understanding if they are to be supportive to the child
    10. Be aware of the normal growth and development patterns in order to determine what to expect of children at a given age
    11. Be precise in recording information

D. Preoperative care

1. Observe for signs of upper respiratory infection or elevated temperature
2. Obtain operative permit
3. NPO
4. Assist with mouth care; check for loose deciduous teeth
5. Permit child to play quietly until time for sedation
6. Check identification
7. Give medication as prescribed
8. Encourage to void

III. Tonsils and adenoids

A. Anatomy and physiology (Transparency 1)

1. Several groups of tonsils form a ring of lymphatic tissue to guard the entrance of the alimentary and respiratory tracts against bacterial invasion
2. Components of this ring are the palatine tonsils, the pharyngeal tonsils or adenoids, and the lingual tonsils
3. Palatine tonsils are two oval masses attached to each lateral wall of the oral pharynx; surgical removal of them is called *tonsillectomy*
4. Pharyngeal tonsils are attached to the roof of the nasal palate; removal of them is called *adenoidectomy*

INFORMATION SHEET

5. Tonsils and adenoids are normally larger in children than in adults

B. Symptoms of inflammation

1. Chronic sore throat or throat infection
2. Enlargement of tonsils and adenoids
3. Enlargement and tenderness of cervical lymph nodes
4. Mouth breathing or snoring

C. Complications

1. Otitis media and/or hearing loss
2. Obstruction of swallowing or breathing
3. Systemic infection

D. Treatment

1. Chemotherapy is usually effective
2. Surgical removal is done only if medical treatment is not effective
3. Condition may correct itself since tonsillar tissue becomes smaller as the child matures

IV. Post-tonsillectomy care

A. Postoperative nursing responsibilities

1. Place in lateral or partially prone position until child regains consciousness; then place in semi-sitting position as desired
2. Observe carefully for hemorrhage or signs of hemorrhage
   a. Increase in pulse and respiration
   b. Restlessness
   c. Frequent swallowing
   d. Emesis of bright red blood
3. Position ice collar as prescribed; refill PRN
4. Observe and assist as needed during emesis
5. Wipe face and hands with cool cloth

INFORMATION SHEET

6. Change gown and linen as necessary

7. Give fluids in small amounts as prescribed or tolerated

   (NOTE: Popsicles, sherbet, jello, ice cream, or juices may be offered.)

8. Avoid using a drinking straw to give fluids

   (NOTE: The suction may cause hemorrhage.)

9. Keep child quiet for remainder of operative day

B. Complications following surgery

1. Hemorrhage

   (NOTE: Postnasal packing or ligation of the bleeding vessel may be required to control bleeding.)

2. Secondary infection such as cold or pneumonia

3. Otitis media

C. Instructions to parents for home care

1. Keep child quiet for a few days

2. Provide a nourishing diet of soft foods and fluids

3. Provide for sufficient rest

4. Protect child from exposure to infections

5. Report to the physician immediately any signs of bleeding, fever, chest pain, or cough

   (NOTE: Earache may follow a tonsillectomy and is usually not serious unless accompanied by a fever.)

6 Observe for elimination

7. Give aspirin or aspirin gum if prescribed to lessen discomfort

V. Asthma

A. Incidence

1. Is most common allergic manifestation in children

2. Occurs in approximately one to two percent of all children

INFORMATION SHEET

B. Anatomy and physiology

1. Allergens cause the smooth muscles of the bronchi and bronchioles to go into spasm
2. Bronchial mucosa becomes edematous and increases the output of mucus
3. Increased and thickened mucous secretions further obstruct the air passages
4. Emphysema frequently develops and increases difficulty of expiration
5. Onset of an attack is usually abrupt, frequently occurs at night, and is often associated with physical or emotional stress
6. Attacks may last for a few minutes or for several hours or days

   (NOTE: When treatment is delayed or is ineffective, a rare serious complication, status asthmaticus, may occur.)

C. Symptoms

1. Coughing
2. Wheezing on expiration
3. Dyspnea
4. Signs of air hunger
   a. Flaring of the nostrils
   b. Cyanosis
   c. Use of accessory muscles of respiration
5. Orthopnea
6. Restlessness
7. Diaphoresis
8. Abdominal pain or vomiting occasionally
9. Increased pulse and respiration
10. Rales

INFORMATION SHEET

D. Treatment

1. Detailed history
2. Skin tests to determine allergies
3. Elimination of allergen from environment
4. Desensitization
5. Avoidance of emotional upsets
6. Administration of antihistamines, hormones, sedatives, and vasoconstrictors

   (NOTE: Some medications used in the treatment of asthma are epinephrine, ephedrine, aminophylline, ACTH, cortisone, potassium iodide, Tedral, and Isuprel.)
7. Humidification
8. Adequate fluid intake

E. Nursing responsibilities

1. Provide a calm, pleasant atmosphere
2. Avoid known allergens in the environment
3. Provide a well-balanced diet omitting known allergens
4. Allow ample time for eating
5. Provide for frequent rest periods
6. Position for comfort and to prevent dyspnea
7. Observe and chart child's behavior when alone, with other children, and with parents
8. Provide emotional support to the child and parents
   a. Assist parents to accept the child's illness and to be supportive and calm
   b. Encourage the child to be as active as condition permits
   c. Provide alternate activities including play
   d. Assist parents to understand the child's realistic potential and limitations

INFORMATION SHEET

VI. Strabismus

A. Anatomy and physiology

1. Six extrinsic muscles move the eyeballs from side to side, up and down, or in a circular pattern

2. Blurred vision or diplopia results when the movement of the eyes is not coordinated; the images do not fall upon corresponding points of the two retinas

3. The brain suppresses vision from the weaker eye to avoid diplopia thus causing amblyopia

4. Humans normally have binocular vision with each retina receiving the same image at a slightly different angle, giving depth to the image

B. Types

1. Monocular--One eye is used continuously while the other is turned inward or outward

2. Alternating--Either eye may be used for seeing with the alternate eye turned inward or outward

C. Symptoms--Deviation may be quite apparent or may be evident only upon examination by an ophthalmologist

D. Treatment

1. Conservative

a. Covering the stronger eye to force the use of the deviating eye

b. Eye exercises to strengthen the weaker muscles

c. Glasses to aid in focusing and strengthening the eyes

2. Surgical correction

a. Muscles are lengthened or shortened to control the position of the eyeballs

b. Surgery is usually performed when the child is three or four; when the condition is not corrected, blindness may occur in the weaker eye since the brain tends to remove the double image

INFORMATION SHEET

E. Preoperative and postoperative nursing responsibilities

   1. Orient the child before surgery to having the eyes covered
   2. Use restraints only as absolutely necessary
   3. Speak to the child before touching when the eyes are covered
   4. Provide diversions
      a. Converse, read, or tell stories
      b. Hold if permitted
      c. Permit the child to keep a favorite toy
   5. Assist with feedings
      a. Feed slowly
      b. Describe food
      c. Let child hold finger foods
   6. Stay with the child or check frequently while the eyes are covered
   7. Reassure the child that the bandages and restraints will be removed as soon as possible

VII. Acute glomerulonephritis

A. Incidence

   1. Occurs most frequently between the ages of three and seven years
   2. Affects boys more than girls
   3. Is more common in winter and spring
   4. Appears to be an allergic reaction to a specific infection, usually group A beta hemolytic streptococcal infection
   5. May occur after a skin infection, strep throat, scarlet fever, or rheumatic fever

B. Anatomy and physiology

   1. Both kidneys are affected
   2. Glomeruli become inflammed and may become obstructed, permitting red cells and protein to be excreted in the urine

INFORMATION SHEET

C. Symptoms

1. Urine smoky brown or bloody
2. Periorbital edema
3. Fever, high at first but gradually levels off at about 100°F or 37.8°C
4. Headache
5. Malaise
6. Vomiting and/or diarrhea
7. Oliguria
8. Albumin, casts, and red and white cells in urine
9. Blood pressure elevated during first few days of illness

D. Prognosis

1. Usually good
2. Mild cases recover in ten to fourteen days
3. Protracted cases may show urinary changes for as long as a year with eventual complete recovery
4. Chronic nephritis resulting in death from renal or heart failure occurs in a very few cases

E. Complications

1. Hypertension
    a. Symptoms--Irritability, headache, vomiting, blurred vision, convulsions, rise in blood pressure, and drop in pulse rate
    b. Treatment--Usually antihypertensive medication
2. Cardiac decompensation
    a. Symptoms--Tachycardia, arrhythmia, rapid respirations, dyspnea, and oliguria
    b. Treatment--Restriction of salt and fluids, antihypertensive medication, oxygen administration, and sedation

INFORMATION SHEET

3. Renal failure
    a. Symptoms--Oliguria or anuria
    b. Treatment--Restoring fluid and electrolyte balance and, in extreme cases, renal dialysis

F. Treatment
1. Bed rest until gross hematuria subsides
2. Regular examination of urine
3. Low salt diet for pronounced edema
4. Restricted protein intake
5. Antibiotic therapy

G. Nursing responsibilities
1. Keep child quiet as long as prescribed
2. Provide diversions to keep child content
3. Protect child from chilling
4. Observe closely for signs of fatigue when child is allowed to be up
5. Prevent contact with persons having an infectious disease
6. Monitor vital signs; report any elevation of temperature or blood pressure immediately
7. Observe for symptoms of headache, drowsiness, vomiting, blurring of vision, muscular twitching, or convulsions
8. Observe intake and output; restrict fluids as prescribed
9. Weigh at the same time each day
10. Observe color and character of urine as well as amount
11. Instruct the parents in the importance of bed rest, prevention of further infections, continued antibiotic therapy, and medical supervision

INFORMATION SHEET

VIII. Leukemia

A. Etiology--Unknown

B. Types

1. May be classified according to the kind of white blood cells which predominate

   (NOTE: The most common types in children are lymphocytic or lymphatic leukemia with lymphocytes predominant and granulocytic or myelogenous leukemia with granulocytes predominant. Approximately fifteen percent of children affected have the granulocytic type.)

2. May be classified according to its rate of development, either acute or chronic

C. Symptoms

1. Fatigue
2. Weakness
3. Weight loss
4. Pallor
5. Tendency to bruise
6. Pain in legs and joints
7. Low grade fever
8. Enlargement of lymph nodes, liver, and spleen
9. Increased intracranial pressure with headache, nausea, and vomiting
10. Anemia

D. Prognosis--Grave; some children experience remissions of varying lengths

E. Treatment

1. Symptomatic, palliative medications

   Examples: Cortisone, hydrocortisone, ACTH

2. Antileukemic medications

   Examples: Meticorten, methotrexate, Cytoxan, and vincristine

INFORMATION SHEET

3. Antibiotics to control infections
4. Blood transfusions
5. Sedatives and analgesics as needed

F. Nursing responsibilities

1. Provide emotional support to the child and the parents
    a. Provide for their comfort
    b. Explain treatments and procedures
    c. Remain calm and helpful, especially when the child is cross and uncooperative and/or the parents become anxious and difficult to please
    d. Remain pleasant and empathetic
    e. Avoid meaningless cliches
2. Provide physical care
    a. Handle gently; change position frequently
    b. Bathe daily or as needed with special attention to creases and pressure areas
    c. Provide mouth care frequently using cotton swabs instead of a toothbrush
    d. Comb and/or brush hair carefully as needed; use wig or head covering as desired
    e. Keep fingernails and toenails short
3. Apply ointments to skin irritations as prescribed
4. Encourage adequate nutrition
    a. Permit the child as much choice in foods as possible
    b. Give small, attractive portions
    c. Permit food to be brought from outside
    d. Feed when necessary
    e. Offer food and fluids frequently

INFORMATION SHEET

5. Provide diversions and play activity according to the child's condition

6. Observe administration of parenteral fluids

7. Monitor vital signs as indicated

   (NOTE: It may be necessary to take an axillary temperature if there is any evidence of rectal bleeding.)

8. Maintain intake and output

IX. Communicable diseases

(NOTE: Only medical and nursing care which is considered specific for the disease is given on the following charts. In addition, each nurse is responsible for providing nursing care as needed for each patient such as monitoring vital signs and intake and output and providing for physical and emotional support.)

DISEASE	INCUBATION PERIOD	MODE OF TRANSMISSION	COMMUNICABLE PERIOD	SYMPTOMS	MEDICAL AND NURSING CARE	PREVENTION IMMUNITY
Diphtheria	2-5 days	Direct or indirect contact with respiratory secretions	As long as virulent organisms are present in secretions	Sore throat with grayish membrane Difficulty swallowing or breathing	Strict bed rest until afebrile Antibiotic therapy for carriers	Toxiod for immunization Antitoxin after exposure Immunity after attack; may be a carrier
Infectious hepatitis	2-6 weeks	Direct or indirect contact with infected feces or blood	May be two months or longer	Abrupt onset Jaundice Nausea and diarrhea	Bed rest High calorie diet Proper disposal of used syringes and needles	Gamma globulin for temporary immunity Immunity after attack possible
Infectious mononucleosis	2-6 weeks	Direct contact with respiratory secretions	Unknown	Sore throat Swollen lymph glands	Bed rest until afebrile Curtailed activities during convalescence High carbohydrate, high protein diet	None No immunity
Mumps (Infectious parotitis)	14-21 days	Direct or indirect contact with infected saliva	6-10 days before swelling to 10 days after swelling	Painful swallowing Swelling of one or both parotid glands	Observe for pain or tenderness in testes or ovaries	Immunity after attack
Pertussis (Whooping cough)	7 days-3 weeks	Direct or indirect contact with infected naso-pharyngeal secretions	7 days-3 weeks after onset of cough	Paroxysmal cough which may linger several weeks	Limit activity to reduce coughing Observe for respiratory distress	Vaccine Immunity after attack

INFORMATION SHEET

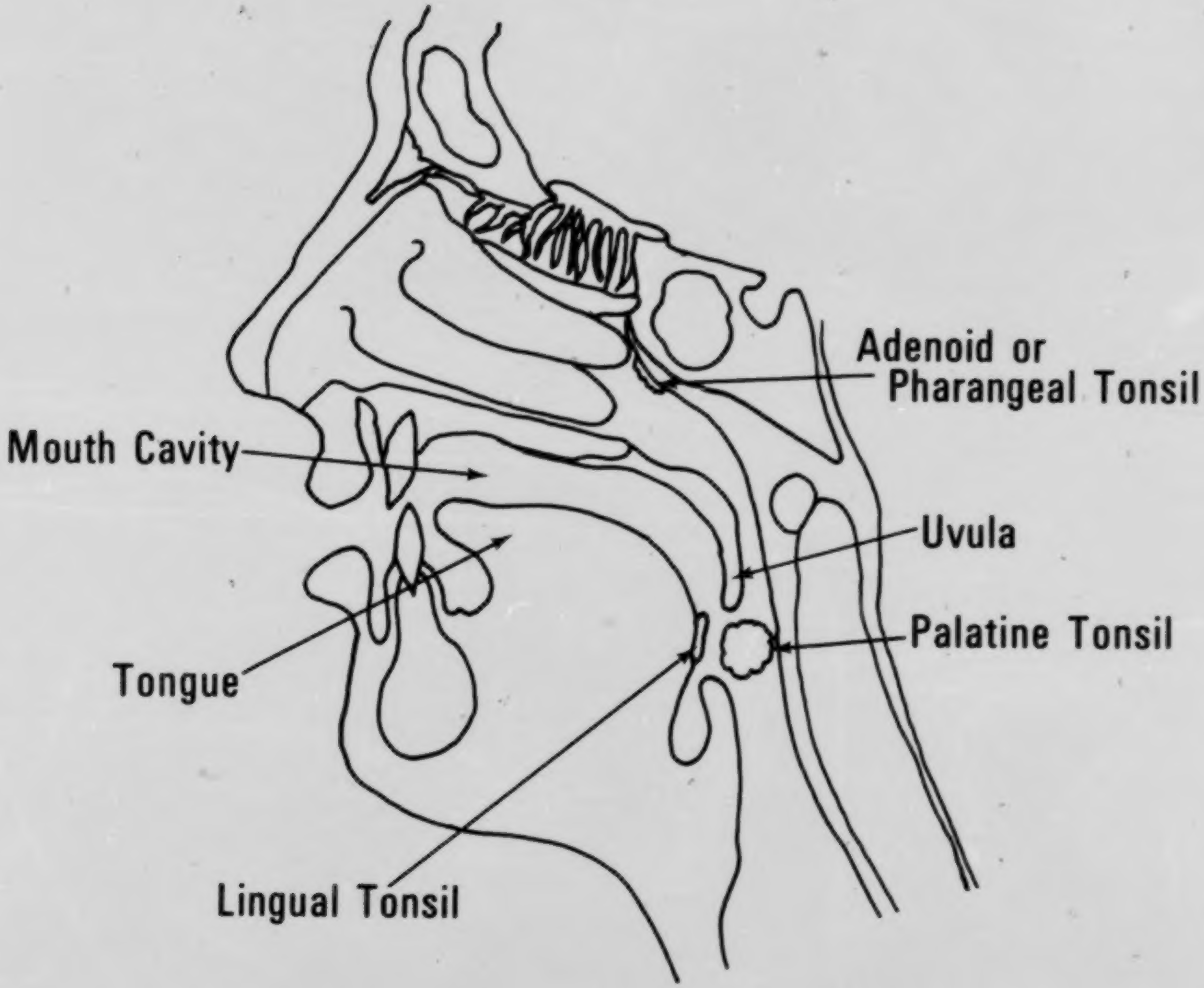
INFORMATION SHEET

DISEASE	INCUBATION PERIOD	MODE OF TRANSMISSION	COMMUNICABLE PERIOD	SYMPTOMS	MEDICAL AND NURSING CARE	PREVENTION IMMUNITY
Poliomyelitis (Polio)	3 days to 3 weeks	Direct contact with infected pharyngeal secretions or feces	Indefinite	Headache Stiffness in neck, back Muscular tenderness Respiratory distress Difficulty in swallowing	Bed rest Supportive treatment as indicated Hot pack Tracheotomy Respiratory assistance Positioning PT and OT	Immunization with Salk or Sabin vaccine Immunity to specific type after attack
Rubella (German measles, 3-day measles)	14-21 days	Direct or indirect contact with infected nasopharyngeal secretions	One week before rash to 4 days after	Low fever Enlarged cervical lymph glands Rash	Bed rest until afebrile Avoid contact with disease during early pregnancy Blood test to determine susceptibility	Vaccine before puberty Immunity after attack
Rubeola (Red measles)	1-2 weeks	Direct or indirect contact with infected nasopharyngeal secretions	4 days before rash to 6 days after	Koplik's spots before rash Mounting fever Dry cough Photophobia Rash on head, then body	Protect eyes from light Relieve itching	Vaccine Immunity after attack
Streptococcal infections (Strep throat, scarlet fever)	1-3 days	Direct or indirect contact with infected nasopharyngeal secretions	During acute stage	Sore throat Rash and strawberry tongue in scarlet fever	Bed rest Antibiotic therapy for at least 10 days	No immunity Antibiotic prophylaxis if indicated May be carrier

DISEASE	INCUBATION PERIOD	MODE OF TRANSMISSION	COMMUNICABLE PERIOD	SYMPTOMS	MEDICAL AND NURSING CARE	PREVENTION IMMUNITY
Tetanus (Lockjaw)	4 days to 3 weeks	Puncture wounds	While drainage is present	Painful muscular contractions Irritability Inability to open mouth	Antitoxin after puncture wound Sedatives and muscle relaxants Quiet, darkened room	Toxoid for active immunity Antitoxin for passive immunity
Typhoid fever	1-3 weeks	Direct contact with contaminated water, food, urine or feces	As long as pathogen is found in urine or feces	Mounting fever Inflammation and ulceration of intestinal tract Rose spots on trunk	Supportive treatment Observe for hemorrhage Maintain fluid and electrolyte balance Antibiotic therapy for carriers; carriers should not be employed as food handlers	Vaccine High resistance after attack
Varicella (Chicken pox)	2-3 weeks	Direct or indirect contact with naso-pharyngeal secretions	One day before rash until 7 days after onset Dried crusts not contagious	Sudden onset Slight fever Maculopapular rash on trunk and scalp first; appears in crops Severe itching Generalized lymphadenopathy	Prevent scratching Measures to minimize itching	No vaccine available Immunity after attack
Variola (Small pox)	7-16 days	Direct or indirect contact with naso-pharyngeal secretions or exudate from lesions.	2 days before rash until all scabs are gone Scabs can remain infectious for years	Sudden onset High fever Raised, firm, scarring rash All lesions appear at same time Photophobia Prostration	Supportive therapy Relieve itching Protect eyes from light Frequent mouth care	Vaccination Immunity after attack

INFORMATION SHEET.

The Tonsils


Adenoid or
Pharangeal Tonsil
Mouth Cavity
Uvula
Palatine Tonsil
Tongue
Lingual Tonsil

CARING FOR THE HOSPITALIZED PRESCHOOL CHILD
UNIT VII

TEST

1. Match the terms on the right to the correct definition. (Answers for "a" through "k" are on this page.)

_____a. Poliomyelitis affecting chiefly the medulla and the pons; difficulty in swallowing and respiratory and circulatory distress may be evident

_____b. Small blister

_____c. Acute or chronic inflammatory disease of the kidneys involving the glomeruli

_____d. General feeling of illness or discomfort

_____e. Lung disorder characterized by abnormal enlargement of the alveoli

_____f. Incision of the trachea

_____g. Allergic condition affecting the bronchi; characterized by dyspnea, wheezing, and a sense of constriction of the chest

_____h. Malignant disease of the tissues in the bone marrow, spleen, and lymph nodes characterized by uncontrolled production of the leukocytes

_____i. Around the eye socket

_____j. Small red spots with gray white centers on the oral mucosa

_____k. Asthmatic crisis requiring intensive treatment; may be fatal

1. Glomerulonephritis
2. Tracheotomy
3. Koplik's spots
4. Asthma
5. Periorbital
6. Vesicle
7. Bulbar poliomyelitis
8. Malaise
9. Status asthmaticus
10. Leukemia
11. Emphysema

(NOTE: The answers for "l" through "s" are on this page.)

______l. Failure of the two eyes to direct their gaze at the same object simultaneously; also called cross-eyes or squint

______m. Infectious disorder in which there is an increase in the number of monocytes

______n. Double vision

______o. Enlargement of the lymph nodes

______p. Virus disease characterized by upper respiratory and gastric symptoms which may progress to involve the central nervous system

______q. Dimness of vision due to disuse; lazy eye

______r. Toxin treated with heat or chemical agent to destroy its toxicity without destroying its ability to stimulate antibody production

______s. Consisting of macules or small reddened areas and papules or red elevated areas

12. Amblyopia
13. Poliomyelitis
14. Toxoid
15. Diplopia
16. Mononucleosis
17. Maculopapular
18. Strabismus
19. Lymphadenopathy

2. Discuss the following factors concerning hospitalization.

   a. Preparation before hospitalization

   b. Nursing responsibilities on admission

c. Nursing responsibilities during hospitalization

d. Preoperative care

3. Discuss factors concerning tonsils and adenoids.

a. Anatomy and physiology

b. Symptoms of inflammation

c. Complications

d. Treatment

4. Discuss post-tonsillectomy care.
   a. Postoperative nursing responsibilities
   b. Complications following surgery
   c. Instructions to parents for home care

5. Describe asthma and its treatment.
   a. Incidence
   b. Anatomy and physiology

c. Symptoms

d. Treatment

e. Nursing responsibilities

6. Discuss strabismus.

   a. Anatomy and physiology

   b. Types

c. Symptoms

d. Treatment

e. Preoperative and postoperative nursing responsibilities

7. Discuss acute glomerulonephritis and the care required.

a. Incidence

b. Anatomy and physiology

c. Symptoms

d. Prognosis

e. Complications

f. Treatment

g. Nursing responsibilities

8. Discuss factors concerning leukemia.

   a. Etiology

b. Types

c. Symptoms

d. Prognosis

e. Treatment

f. Nursing responsibilities

9. Complete the charts on the following pages by writing the correct name of each disease in the blanks provided.

DISEASE	INCUBATION PERIOD	MODE OF TRANSMISSION	COMMUNICABLE PERIOD	SYMPTOMS	MEDICAL AND NURSING CARE	PREVENTION IMMUNITY
a. ______	7-16 days	Direct or indirect contact with nasopharyngeal secretions or exudate from lesions	2 days before rash until all scabs are gone Scabs can remain infectious for years	Sudden onset High fever Raised, firm scarring rash All lesions appear at same time Photophobia Prostration	Supportive therapy Relieve itching Protect eyes from light Frequent mouth care	Vaccination Immunity after attack
b. ______	2-6 weeks	Direct or indirect contact with infected feces or blood	May be two months or longer	Abrupt onset Jaundice Nausea and diarrhea	Bed rest High calorie diet Proper disposal of used syringes and needles	Gamma globulin for temporary immunity Immunity after attack possible
c. ______	2-5 days	Direct or indirect contact with respiratory secretions	As long as virulent organisms are present in secretions	Sore throat with grayish membrane Difficulty swallowing or breathing	Strict bed rest until afebrile Antibiotic therapy for carriers	Toxiod for immunization Antitoxin after exposure Immunity after attack; may be a carrier
d. ______	4 days to 3 weeks	Puncture wounds	While drainage is present	Painful muscular contractions Irritability Inability to open mouth Convulsions	Antitoxin after puncture wound Sedatives and muscle relaxants Quiet, darkened room	Toxiod for active immunity Antitoxin for passive immunity
e. ______	14-21 days	Direct or indirect contact with infected saliva	6-10 days before swelling to 10 days after swelling	Painful swallowing Swelling of one or both parotid glands	Observe for pain or tenderness in testes or ovaries	Immunity after attack

DISEASE	INCUBATION PERIOD	MODE OF TRANSMISSION	COMMUNICABLE PERIOD	SYMPTOMS	MEDICAL AND NURSING CARE	PREVENTION IMMUNITY
f.__________	1-3 weeks	Direct contact with contaminated water, food, urine, or feces	As long as pathogen is found in urine or feces	Mounting fever Inflammation and ulceration of intestinal tract Rose spots on trunk	Supportive treatment Observe for hemorrhage Maintain fluid and electrolyte balance Antibiotic therapy for carriers; carriers should not be employed as food handlers	Vaccine High resistance after attack
g.__________	3 days to 3 weeks	Direct contact with infected pharyngeal secretions or feces	Indefinite	Headache Stiffness in neck, back Muscular tenderness Respiratory distress Difficulty in swallowing	Bed rest Supportive treatment as indicated Hot packs Tracheotomy Respiratory assistance Positioning PT and OT	Immunization with Salk or Sabin vaccine Immunity to specific type after attack
h.__________	1-2 weeks	Direct or indirect contact with infected naso-pharyngeal secretions	4 days before rash to 6 days after	Koplik's spots before rash Mounting fever Dry cough Photophobia Rash on head, then body	Protect eyes from light Relieve itching	Vaccine Immunity after attack
i.__________	2-6 weeks	Direct contact with respiratory secretions	Unknown	Sore throat Swollen lymph glands	Bed rest until afebrile Curtailed activities during convalescence High carbohydrate, high protein diet	None No immunity

DISEASE	INCUBATION PERIOD	MODE OF TRANSMISSION	COMMUNICABLE PERIOD	SYMPTOMS	MEDICAL AND NURSING CARE	PREVENTION IMMUNITY
j.__________	2-3 weeks	Direct or indirect contact with naso-pharyngeal secretions	One day before rash until 7 days after onset Dried crusts not contagious	Sudden onset Slight fever Maculopapular rash on trunk and scalp first appears in crops Severe itching Generalized lymph-adenopathy	Prevent scratching Measures to minimize itching	No vaccine available Immunity after attack
k.__________	1-3 days	Direct or indirect contact with infected naso-pharyngeal secretions	During acute stage carrier state possible	Sore throat Rash and strawberry tongue in scarlet fever	Bed rest Antibiotic therapy for at least 10 days	No immunity Antibiotic prophylaxis if indicated May be carrier
l.__________	14-21 days	Direct or indirect contact with infected naso-pharyngeal secretions	One week before rash to 4 days after	Low fever Enlarged cervical lymph glands Rash	Bed rest until afebrile Avoid contact with disease during early pregnancy Blood test to determine susceptibility	Vaccine before puberty Immunity after attack
m.__________	7 days-3 weeks	Direct or indirect contact with infected naso-pharyngeal secretions	7 days-3 weeks after onset of cough	Paroxysmal cough which may linger several weeks	Limit activity to reduce coughing Observe for respiratory distress	Vaccine Immunity after attack

CARING FOR THE HOSPITALIZED PRESCHOOL CHILD
UNIT VII

ANSWERS TO TEST

1.
a. 7
b. 6
c. 1
d. 8
e. 11
f. 2
g. 4
h. 10
i. 5
j. 3
k. 9
l. 18
m. 16
n. 15
o. 19
p. 13
q. 12
r. 14
s. 17

2. Discussion should include:

   a. Preparation before hospitalization

      1) Tell the child about going to the hospital
      2) Explain what treatments and procedures may be done
      3) Reassure the child that the parents will be present as much as possible
      4) Permit the child to take a favorite toy or other object to the hospital
      5) Answer questions simply and truthfully; encourage verbalization

   b. Nursing responsibilities on admission

      1) Call by name
      2) Treat as an individual
      3) Show around the unit or ward as appropriate
      4) Give instructions about the call system
      5) Permit the mother to assist with undressing
      6) Explain procedures in simple terms

c. Nursing responsibilities during hospitalization

1) Provide a visible place for the child to keep possessions

2) Adjust routines to enable the family to participate in the child's care

3) Permit the child to examine instruments and othe equipment to be used

4) Have a familiar person accompany the child when taken to other departments for tests or treatments

5) Be aware that the child and the parents may be experiencing guilt feelings about the illness or injury

6) Expect regressions in behavior; reassure the child rather than scold

7) Use play activity and story telling to explain procedures; encourage expression of fears and confusion

8) Converse with the child

9) Remember that parents need reassurance and understanding if they are to be supportive to the child

10) Be aware of the normal growth and development patterns in order to determine what to expect of children at a given age

11) Be precise in recording information

d. Preoperative care

1) Observe for signs of upper respiratory infection or elevated temperature

2) Obtain operative permit

3) NPO

4) Assist with mouth care; check for loose deciduous teeth

5) Permit child to play quietly until time for sedation

6) Check identification

7) Give medication as prescribed

8) Encourage to void

3. Discussion should include:
   a. Anatomy and physiology
      1) Several groups of tonsils form a ring of lymphatic tissue to guard the entrance of the alimentary and respiratory tracts against bacterial invasion
      2) Components of this ring are the palatine tonsils, the pharyngeal tonsils or adenoids, and the lingual tonsils
      3) Palatine tonsils are two oval masses attached to each lateral wall of the oral pharynx; surgical removal of them is called *tonsillectomy*
      4) Pharyngeal tonsils are attached to the roof of the nasal palate; removal of them is called *adenoidectomy*
      5) Tonsils and adenoids are normally larger in children than in adults
   b. Symptoms of inflammation
      1) Chronic sore throat or throat infection
      2) Enlargement of tonsils and adenoids
      3) Enlargement and tenderness of cervical lymph nodes
      4) Mouth breathing or snoring
   c. Complications
      1) Otitis media and/or hearing loss
      2) Obstruction of swallowing or breathing
      3) Systemic infection
   d. Treatment
      1) Chemotherapy is usually effective
      2) Surgical removal is done only if medical treatment is not effective
      3) Condition may correct itself since tonsillar tissue becomes smaller as the child matures
4. Discussion should include:
   a. Postoperative nursing responsibilities
      1) Place in lateral or partially prone position until child regains consciousness; then place in semi-sitting position as desired

2) Observe carefully for hemorrhage or signs of hemorrhage
    a) Increase in pulse and respiration
    b) Restlessness
    c) Frequent swallowing
    d) Emesis of bright red blood
3) Position ice collar as prescribed; refill PRN
4) Observe and assist as needed during emesis
5) Wipe face and hands with cool cloth
6) Change gown and linen as necessary
7) Give fluids in small amounts as prescribed or tolerated
8) Avoid using a drinking straw to give fluids
9) Keep child quiet for remainder of operative day

b. Complications following surgery
    1) Hemorrhage
    2) Secondary infection such as cold or pneumonia
    3) Otitis media

c. Instructions to parents for home care
    1) Keep child quiet for a few days
    2) Provide a nourishing diet of soft foods and fluids
    3) Provide for sufficient rest
    4) Protect child from exposure to infections
    5) Report to the physician immediately any signs of bleeding, fever, chest pain, or cough
    6) Observe for elimination
    7) Give aspirin or aspirin gum if prescribed to lessen discomfort

5. Description should include:
   a. Incidence
      1) Is most common allergic manifestation in children
      2) Occurs in approximately one to two percent of all children
   b. Anatomy and physiology
      1) Allergens cause the smooth muscles of the bronchi and bronchioles to go into spasm
      2) Bronchial mucosa becomes edematous and increases the output of mucus
      3) Increased and thickened mucous secretions further obstruct the air passages
      4) Emphysema frequently develops and increases difficulty of expiration
      5) Onset of an attack is usually abrupt, frequently occurs at night, and is associated with physical or emotional stress
      6) Attacks may last for a few minutes or for several hours or days
   c. Symptoms
      1) Coughing
      2) Wheezing on expiration
      3) Dyspnea
      4) Signs of air hunger
         a) Flaring of the nostrils
         b) Cyanosis
         c) Use of accessory muscles of respiration
      5) Orthopnea
      6) Restlessness
      7) Diaphoresis
      8) Abdominal pain or vomiting occasionally
      9) Increased pulse and respiration
      10) Rales

d. Treatment

1) Detailed history

2) Skin tests to determine allergies

3) Elimination of allergen from environment

4) Desensitization

5) Avoidance of emotional upsets

6) Administration of antihistamines, hormones, sedatives, and vasoconstrictors

7) Humidification

8) Adequate fluid intake

e. Nursing responsibilities

1) Provide a calm, pleasant atmosphere

2) Avoid known allergens in the environment

3) Provide a well-balanced diet omitting known allergens

4) Allow ample time for eating

5) Provide for frequent rest periods

6) Position for comfort and to prevent dyspnea

7) Observe and chart child's behavior when alone, with other children, and with parents

8) Provide emotional support to the child and parents

a) Assist parents to accept the child's illness and to be supportive and calm

b) Encourage the child to be as active as condition permits

c) Provide alternate activities including play

d) Assist parents to understand the child's realistic potential and limitations

6. Discussion should include:

a. Anatomy and physiology

1) Six extrinsic muscles move the eyeballs from side to side, up and down, or in a circular pattern

2) Blurred vision or diplopia results when the movement of the eyes is not coordinated; the images do not fall upon corresponding points of the two retinas

3) The brain suppresses vision from the weaker eye to avoid diplopia thus causing amblyopia

4) Humans normally have binocular vision with each retina receiving the same image at a slightly different angle, giving depth to the image

b. Types

1) Monocular--One eye is used continuously while the other is turned inward or outward

2) Alternating--Either eye may be used for seeing with the alternate eye turned inward or outward

c. Symptoms--Deviation may be quite apparent or may be evident only upon examination by an ophthalmologist

d. Treatment

1) Conservative

a) Covering the stronger eye to force the use of the deviating eye

b) Eye exercises to strengthen the weaker muscles

c) Glasses to aid in focusing and strengthening the eyes

2) Surgical correction

a) Muscles are lengthened or shortened to control the position of the eyeballs

b) Surgery is usually performed when the child is three or four; when the condition is not corrected, blindness may occur in the weaker eye since the brain tends to remove the double image

e. Preoperative and postoperative nursing responsibilities

1) Orient the child before surgery to having the eyes covered

2) Use restraints only as absolutely necessary

3) Speak to the child before touching when the eyes are covered

4) Provide diversions

a) Converse, read, or tell stories

- b) Hold if permitted
- c) Permit the child to keep a favorite toy

5) Assist with feedings
   - a) Feed slowly
   - b) Describe food
   - c) Let child hold finger foods

6) Stay with the child or check frequently while the eyes are covered

7) Reassure the child that the bandages and restraints will be removed as soon as possible

7. Discussion should include:
   - a. Incidence
     - 1) Occurs most frequently between the ages of three and seven years
     - 2) Affects boys more than girls
     - 3) Is more common in winter and spring
     - 4) Appears to be an allergic reaction to a specific infection, usually group A beta hemolytic streptococcal infection
     - 5) May occur after a skin infection, strep throat, scarlet fever, or rheumatic fever
   - b. Anatomy and physiology
     - 1) Both kidneys are affected
     - 2) Glomeruli become inflammed and may become obstructed, permitting red cells and protein to be excreted in the urine
   - c. Symptoms
     - 1) Urine smoky brown or bloody
     - 2) Periorbital edema
     - 3) Fever, high at first but gradually levels off at about 100°F or 37.8°C
     - 4) Headache
     - 5) Malaise

6) Vomiting and/or diarrhea

7) Oliguria

8) Albumin, casts, and red and white cells in urine

9) Blood pressure elevated during first few days of illness

d. Prognosis

1) Usually good

2) Mild cases recover in ten to fourteen days

3) Protracted cases may show urinary changes for as long as a year with eventual complete recovery

4) Chronic nephritis resulting in death from renal or heart failure occurs in a very few cases

e. Complications

1) Hypertension

a) Symptoms--Irritability, headache, vomiting, blurred vision, convulsions, rise in blood pressure, and drop in pulse rate

b) Treatment--Usually antihypertensive medication

2) Cardiac decompensation

a) Symptoms--Tachycardia, arrhythmia, rapid respirations, dyspnea, and oliguria

b) Treatment--Restriction of salt and fluids, antihypertensive medication, oxygen administration, and sedation

3) Renal failure

a) Svmptoms--Oliguria or anuria

b) Treatment--Restoring fluid and electrolyte balance and, in extreme cases, renal dialysis

f. Treatment

1) Bed rest until gross hematuria subsides

2) Regular examination of urine

3) Low salt diet for pronounced edema

4) Restricted protein intake

5) Antibiotic therapy

g. Nursing responsibilities

1) Keep child quiet as long as prescribed

2) Provide diversions to keep child content

3) Protect child from chilling

4) Observe closely for signs of fatigue when child is allowed to be up

5) Prevent contact with persons having an infectious disease

6) Monitor vital signs; report any elevation of temperature or blood pressure immediately

7) Observe for symptoms of headache, drowsiness, vomiting, blurring of vision, muscular twitching, or convulsions

8) Observe intake and output; restrict fluids as prescribed

9) Weight at the same time each day

10) Observe color and character of urine as well as amount

11) Instruct the parents in the importance of bed rest, prevention of further infections, continued antibiotic therapy, and medical supervision

8. Discussion should include:

a. Etiology--Unknown

b. Types

1) May be classified according to the kind of white blood cells which predominate

2) May be classified according to its rate of development, either acute or chronic

c. Symptoms

1) Fatigue

2) Weakness

3) Weight loss

4) Pallor

5) Tendency to bruise

6) Pain in legs and joints

    7) Low grade fever
    8) Enlargement of lymph nodes, liver, and spleen
    9) Increased intracranial pressure with headache, nausea, and vomiting
    10) Anemia

d. Prognosis--Grave; some children experience remissions of varying lengths

e. Treatment

    1) Symptomatic, palliative medications
    2) Antileukemic medications
    3) Antibiotics to control infections
    4) Blood transfusions
    5) Sedatives and analgesics as needed

f. Nursing responsibilities

    1) Provide emotional support to the child and the parents
        a) Provide for their comfort
        b) Explain treatments and procedures
        c) Remain calm and helpful, especially when the child is cross and uncooperative and/or the parents become anxious and difficult to please
        d) Remain pleasant and empathetic
        e) Avoid meaningless cliches
    2) Provide physical care
        a) Handle gently; change position frequently
        b) Bathe daily or as needed with special attention to creases and pressure areas
        c) Provide mouth care frequently using cotton swabs instead of a toothbrush
        d) Comb and/or brush hair carefully as needed; use wig or head covering as desired
        e) Keep fingernails and toenails short
    3) Apply ointments to skin irritations as prescribed

4) Encourage adequate nutrition
   a) Permit the child as much choice in foods as possible
   b) Give small, attractive portions
   c) Permit food to be brought from outside
   d) Feed when necessary
   e) Offer food and fluids frequently
5) Provide diversions and play activity according to the child's condition
6) Observe administration of parenteral fluids
7) Monitor vital signs as indicated
8) Maintain intake and output

9. a. Variola; smallpox
   b. Infectious hepatitis
   c. Diphtheria
   d. Tetanus; lockjaw
   e. Mumps; infectious parotitis
   f. Typhoid fever
   g. Poliomyelitis; polio
   h. Rubeola; red measles
   i. Infectious mononucleosis
   j. Varicella; chickenpox
   k. Streptococcal infections; strep throat and scarlet fever
   l. Rubella; German measles or three day measles
   m. Pertussis; whooping cough

GROWTH AND DEVELOPMENT OF THE SCHOOL-AGE CHILD
UNIT VIII

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to describe the physical characteristics of the school-age child and discuss the behavior, guidance, and mental development of children from six to twelve years. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Describe the physical characteristics of the six- to nine-year-old.
2. Discuss the behavior and guidance of the six- to nine-year-old.
3. Describe the physical characteristics of the nine- to twelve-year-old.
4. Discuss the behavior and guidance of the nine- to twelve-year-old.
5. Describe mental development at six to twelve years of age.
6. Discuss the nutritional requirements of the school-age child.
7. Discuss sex education of the school-age child.
8. Discuss discipline of the school-age child.
9. List suitable and unsuitable television programs for the school-age child.

GROWTH AND DEVELOPMENT OF THE SCHOOL-AGE CHILD
UNIT VIII

SUGGESTED ACTIVITIES

I. Instructor:

- A. Provide students with objectives.
- B. Provide students with information and assignment sheets.
- C. Discuss terminal and specific objectives.
- D. Discuss information and assignment sheets.
- E. Give test.

II. Student:

- A. Read objectives.
- B. Study information sheet.
- C. Complete assignment sheet.
- D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

- A. Objectives
- B. Information sheet
- C. Assignment Sheet #1--List TV Programs
- D. Test
- E. Answers to test

II. References:

- A. Brisbane, Holly E. *The Developing Child.* Peoria, Illinois: Chas. A. Bennett Company, Inc., 1965.
- B. Broadribb, Violet, and Charlotte Corliss. *Maternal-Child Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

C. Hurlock, Elizabeth B. *Child Development.* New York: McGraw-Hill Book Company, 1972.

D. Petrillo, Madeline, and Sirgay Sanger. *Emotional Care of Hospitalized Children.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1972.

E. Shuey, Rebekah M. et al. *Learning About Children.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1969.

F. Thompson, Eleanor D. *Pediatrics for Practical Nurses.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1970.

III. Other materials:

A. Films

1. "From Sociable Six to Noisy Nine." McGraw-Hill Films.

2. "From Ten to Twelve." McGraw-Hill Films.

3. "Developmental Characteristics of Preadolescents." McGraw-Hill Films.

4. "Six-, Seven-, and Eight-Year-Olds." McGraw-Hill Films.

5. "If These Were Your Children." Metropolitan Life Insurance Company.

6. "Looking at Children." Metropolitan Life Insurance Company.

(NOTE: These films are available to Oklahoma instructors from the Oklahoma State Department of Health.)

B. Periodicals

1. Luciano, Kathy. "Preparing Children for Surgery." *Nursing '74,* November.

2. Van Huttum, Rolland. "Communication Disorders in Children." *Nursing '75,* March.

GROWTH AND DEVELOPMENT OF THE SCHOOL-AGE CHILD
UNIT VIII

INFORMATION SHEET

I. Physical characteristics of the six- to nine-year-old

   A. Girls usually grow more rapidly than boys

   B. At age six the twenty deciduous teeth will begin to be replaced; four lower and four upper teeth will be replaced by the end of the eighth year; six-year molars are the first permanent teeth to erupt

   C. Uneven growth of different parts of the body makes the child look lanky and awkward; arms and legs lengthen; hands and feet grow larger

   D. Games that provide large muscle exercise and much activity become popular

   E. Opportunities in drawing, writing, painting, claywork, and playing musical instruments aid in development of small muscles

   F. In this period of constant activity the child may have difficulty in remaining quiet for any length of time

   G. Appetite is generally good; food habits are influenced by both family and peers

   H. Nine to eleven hours of sleep are essential but the child may need some prodding to get an adequate amount; as the growth rate fluctuates so does the need for sleep

II. Behavior and guidance of the six- to nine-year-old

   A. Is concerned with peer status, failure in performance at home and at school, being tardy, and fears from an overactive imagination

   B. Is curious and eager to learn

   C. Strives to please others and joins eagerly in group activities; may prefer being alone at times

   D. May be sensitive to criticism; increased experience and resulting self-confidence may lead the child to be bossy and rude

   E. Has a sense of fair play and is developing conscience which gives a better concept of self in respect to others; becomes dependable, cooperative, and responsible

   F. Shows a preference for games and activities with own sex and belittles the interests and persons of the other sex

INFORMATION SHEET

G. Needs help in maintaining a planned schedule of activities because concept of time develops slowly

H. Can handle a small allowance and begins to learn the value of money

I. Develops a sense of industry and needs opportunity to express ability and accept responsibility

J. Needs both active and quiet play

K. Should have a room or an area for which some responsibility can be assumed

L. Should have annual physical examination, booster shots, and dental care

III. Physical characteristics of the nine- to twelve-year-old

A. Girls begin a period of rapid growth; boys' growth spurt occurs later

B. Between nine and eleven years the eight temporary molars are replaced by eight bicuspids; four canines replace the temporary canines

C. Shaping takes place with a general softening and rounding of bony contours

D. Organized games and mastery of competitive skills such as skating, sports, handcrafts, and sewing become important

E. Control of the body, particularly finer muscles, increases; movements are positive and graceful

F. While active sports and games are enjoyed, the preadolescent also plays quieter table games with great enthusiasm

G. Diversities in weight and size assume greater importance; emphasis on proper nutrition should be stressed but not to the point of causing anxiety

H. Staying up later appeals to the desire for increasing independence; sleep is usually deep and unbroken

IV. Behavior and guidance of the nine- to twelve-year-old

A. Due to rapid physical changes the preadolescent may experience frequent, intense mood changes

B. The desire to learn is strong but the older child may object to instruction in struggling to achieve a measure of independence

C. The child knows the difference between right and wrong and may suffer guilt feelings for childish behavior

INFORMATION SHEET

D. The child is usually congenial and well-behaved, but on occasion emotional control can be upset by a reprimand or critical comment

E. Nervous fidgeting and constant activity help relieve tension

F. Girls are usually more interested in personal appearance and attractiveness while boys are interested in physical size, strength, and ability

G. As awareness of time increases, the preadolescent becomes more responsible for getting tasks accomplished at a set time

H. The older child begins to understand the concept of saving money to purchase a desired toy or game

I. While the older child is more capable of accepting responsibility, he/she cannot be expected to always behave as desired

J. Athletic activities aid in physical development and coordination while games involving mental competition aid in intellectual development

K. The older child should be permitted time for privacy and for being alone, if possible, in a room or an area which is considered off limits to other persons except by invitation

L. The preadolescent should become responsible for his/her own physical care to a greater degree and should be taught how to care for clothing and personal belongings

V. Mental development at six to twelve years of age

A. Mental ability and mental development vary greatly; they are affected by heredity and environment

B. Adequate nutrition and sufficient sleep are necessary for optimum mental development

C. Learning motor skills requires much practice; learning to read, to write, and to figure also requires concentration and much repetition

D. Learners need to experience success; a feeling of accomplishment stimulates the child to try to learn more; a feeling of failure leads to a sense of inadequacy and stifles the desire to accomplish

E. Children soon recognize their differences in ability; they should be helped to recognize their achievements and to overcome their weaknesses

F. Children in the six- to twelve-year age group often learn to reason as well as adults although they may be unable to express themselves well; they should be permitted to use their own judgment and reasoning powers

INFORMATION SHEET

G. Most children have active imaginations; imagination should be encouraged so long as the child is not too absorbed in fantasy or daydreaming

(NOTE: Imagination can be developed by telling and reading poems and stories to children; encouraging them to participate in storytelling or invent stories of their own; dramatizing stories, drawing, painting, or modeling in clay; making things of wood, plastic, cloth, or other materials; and by reading suitable fiction. Many of these methods can be used to aid the hospitalized child to understand procedures and treatments or to express concerns and anxieties.)

H. The intellectual potential is different for each child; those that are superior in intelligence should be given extra activities to perform; slow learners should be assisted to achieve the best performance possible

I. Children with learning disabilities can be helped to achieve much more if the disability is detected and acknowledged while they are very young; a pattern of failure is very difficult to change

VI. Nutritional requirements

A. Adequate diet is important

B. Equally important is a pleasant atmosphere; mealtime should not be used as a fault-finding time

C. Children may go on food jags or follow fads and wish to have the same foods repeatedly; such actions do not matter greatly as long as they receive the essential nutrients

D. Breakfast is an important meal and time should be scheduled for it

E. Between-meal snacks should be considered as an essential part of the daily food intake; they should be planned to provide proper nutrition and should not interfere with mealtime

F. If the child is decidedly overweight or underweight, an effort should be made to determine the cause

1. Suggestions for decreasing weight

a. Psychological assistance and understanding such as emphasizing other interests, teaching caloric values, and letting the child help plan meals

b. Decreased food intake at all meals

c. Substitution of fruits for high calorie desserts

d. Fewer between-meal snacks

e. Increased exercise

f. Properly balanced diet

INFORMATION SHEET

2. Suggestions for increasing weight
    - a. Properly balanced diet, concentrating on high calorie foods
    - b. Regular mealtime
    - c. Well-prepared, attractive meals
    - d. Snacks between meals but not just before meals
    - e. Calm, pleasant mealtime atmosphere
    - f. Small servings, with second servings encouraged
    - g. Psychological or physical disturbances evaluated
    - h. Adequate rest to avoid overfatigue

      (NOTE: A short rest period or a quiet activity prior to mealtime may increase the appetite.)

VII. Sex education

A. The child is becoming more aware of physical sexual differences and the effects of body changes

B. Sex education should include information concerning reproduction and should also help the child to develop a desirable attitude toward the body, sex, and sexual role in order to develop into a mature person

C. Parents' actions toward each other and their children influence the child's concept of the male or female role

D. The best teaching can be done by parents who feel comfortable and relaxed with their role; for parents who feel insecure about such teaching, there are many pamphlets available for all ages of children

E. As children near puberty, they should be told about physical changes which will occur; in today's society the child is exposed to misleading and superficial views of sex

VIII. Discipline

A. Children should not be expected to have the judgment and knowledge of an adult but they should be respected as individuals with certain rights and privileges

B. The parent's role in discipline is to set standards, to indicate necessary limits, and to protect the child from physical and emotional injury

INFORMATION SHEET

C. A child needs to feel the parents' disapproval for misbehavior but also needs to feel that the home is a safe, secure place where he/she is loved

D. Punishment is useful only when the child learns constructively from it; punishment should be suited to the misbehavior and should follow the misbehavior as soon as possible so the two will be associated

E. Disciplinary measures should be suited to the child's age and explained appropriately

F. Discipline should be consistent and neither too strict nor too permissive; its chief function should be to help the child develop self-control and self direction

(NOTE: When discipline is too lenient the child is confused, feels insecure, and may have difficulty making decisions about appropriate behavior.)

GROWTH AND DEVELOPMENT OF THE SCHOOL-AGE CHILD
UNIT VIII

ASSIGNMENT SHEET #1--LIST TV PROGRAMS

Make a list of four television programs you consider suitable for the school-age group and four programs which are unsuitable. Explain why.

GROWTH AND DEVELOPMENT OF THE SCHOOL-AGE CHILD
UNIT VIII

TEST

1. Describe the physical characteristics of the six- to nine-year-old.

2. Discuss the behavior and guidance of the six- to nine-year-old.

3. Describe the physical characteristics of the nine- to twelve-year-old.

4. Discuss the behavior and guidance of the nine- to twelve-year-old.

5. Describe mental development at six to twelve years of age.

6. Discuss the nutritional requirements of the school-age child.

7. Discuss sex education of the school-age child.

8. Discuss discipline of the school-age child.

9. List suitable and unsuitable television programs for the school-age child.

(NOTE: If this has not been accomplished prior to the test, ask the instructor when the above activity should be done.)

GROWTH AND DEVELOPMENT OF THE SCHOOL-AGE CHILD
UNIT VIII

ANSWERS TO TEST

1. Description should include:
   - a. Girls usually grow more rapidly than boys
   - b. At age six the twenty deciduous teeth will begin to be replaced; four lower and four upper teeth will be replaced by the end of the eighth year; six-year molars are the first permanent teeth to erupt
   - c. Uneven growth of different parts of the body makes the child look lanky and awkward; arms and legs lengthen; hands and feet grow larger
   - d. Games that provide large muscle exercise and much activity become popular
   - e. Opportunities in drawing, writing, painting, claywork, and playing musical instruments aid in development of small muscles
   - f. In this period of constant activity the child may have difficulty in remaining quiet for any length of time
   - g. Appetite is generally good; food habits are influenced by both family and peers
   - h. Nine to eleven hours of sleep are essential but the child may need some prodding to get an adequate amount; as the growth rate fluctuates so does the need for sleep
2. Discussion should include:
   - a. Is concerned with peer status, failure in performance at home and at school, being tardy, and fears from an overactive imagination
   - b. Is curious and eager to learn
   - c. Strives to please others and joins eagerly in group activities; may prefer being alone at times
   - d. May be sensitive to criticism; increased experience and resulting self-confidence may lead the child to be bossy and rude
   - e. Has a sense of fair play and is developing conscience which gives a better concept of self in respect to others; becomes dependable, cooperative, and responsible
   - f. Shows a preference for games and activities with own sex and belittles the interests and persons of the other sex
   - g. Needs help in maintaining a planned schedule of activities because concept of time develops slowly

h. Can handle a small allowance and begins to learn the value of money

i. Develops a sense of industry and needs opportunity to express ability and accept responsibility

j. Needs both active and quiet play

k. Should have a room or an area for which some responsibility can be assumed

l. Should have annual physical examination, booster shots, and dental care

3. Description should include:

a. Girls begin a period of rapid growth; boys' growth spurt occurs later

b. Between nine and eleven years the eight temporary molars are replaced by eight bicuspids; four canines replace the temporary canines

c. Shaping takes place with a general softening and rounding of bony contours

d. Organized games and mastery of competitive skills such as skating, sports, handcrafts, and sewing become important

e. Control of the body, particularly finer muscles, increases; movements are positive and graceful

f. While active sports and games are enjoyed, the preadolescent also plays quieter table games with great enthusiasm

g. Diversities in weight and size assume greater importance; emphasis on proper nutrition should be stressed but not to the point of causing anxiety

h. Staying up later appeals to the desire for increasing independence; sleep is usually deep and unbroken

4. Discussion should include:

a. Due to rapid physical changes the preadolescent may experience frequent, intense mood changes

b. The desire to learn is strong but the older child may object to instruction in struggling to achieve a measure of independence

c. The child knows the difference between right and wrong and may suffer guilt feelings for childish behavior

d. The child is usually congenial and well-behaved, but on occasion emotional control can be upset by a reprimand or critical comment

e. Nervous fidgeting and constant activity help relieve tension

f. Girls are usually more interested in personal appearance and attractiveness while boys are interested in physical size, strength, and ability

g. As awareness of time increases, the preadolescent becomes more responsible for getting tasks accomplished at a set time

h. The older child begins to understand the concept of saving money to purchase a desired toy or game

i. While the older child is more capable of accepting responsibility, he/she cannot be expected to always behave as desired

j. Athletic activities aid in physical development and coordination while games involving mental competition aid in intellectual development

k. The older child should be permitted time for privacy and for being alone, if possible, in a room or an area which is considered off limits to other persons except by invitation

l. The preadolescent should become responsible for his/her own physical care to a greater degree and should be taught how to care for clothing and personal belongings

5. Description should include:

a. Mental ability and mental development vary greatly; they are affected by heredity and environment

b. Adequate nutrition and sufficient sleep are necessary for optimum mental development

c. Learning motor skills requires much practice; learning to read, to write, and to figure also requires concentration and much repetition

d. Learners need to experience success; a feeling of accomplishment stimulates the child to try to learn more; a feeling of failure leads to a sense of inadequacy and stifles desire to accomplish

e. Children soon recognize their differences in ability; they should be helped to recognize their achievements and to overcome their weaknesses

f. Children in the six- to twelve-year age group often learn to reason as well as adults although they may be unable to express themselves well; they should be permitted to use their own judgment and reasoning powers

g. Most children have active imaginations; imagination should be encouraged so long as the child is not too absorbed in fantasy or daydreaming

h. The intellectual potential is different for each child; those that are superior in intelligence should be given extra activities to perform; slow learners should be assisted to achieve the best performance possible

i. Children with learning disabilities can be helped to achieve much more if the disability is detected and acknowledged while they are very young; a pattern of failure is very difficult to change

6. Discussion should include:

a. Adequate diet is important

b. Equally important is a pleasant atmosphere; mealtime should not be used as a fault-finding time

c. Children may go on food jags or follow fads and wish to have the same foods repeatedly; such actions do not matter greatly as long as they receive the essential nutrients

d. Breakfast is an important meal and time should be scheduled for it

e. Between-meal snacks should be considered as an essential part of the daily food intake; they should be planned to provide proper nutrition and should not interfere with mealtime

f. If the child is decidedly overweight or underweight, an effort should be made to determine the cause

  1) Suggestions for decreasing weight

    a) Psychological assistance and understanding such as emphasizing other interests, teaching caloric values, and letting the child help plan meals

    b) Decreased food intake at all meals

    c) Substitution of fruits for high calorie desserts

    d) Fewer between-meal snacks

    e) Increased exercise

    f) Properly balanced diet

  2) Suggestions for increasing weight

    a) Properly balanced diet, concentrating on high calorie foods

    b) Regular mealtime

    c) Well-prepared, attractive meals

    d) Snacks between meals but not just before meals

    e) Calm, pleasant mealtime atmosphere

    f) Small servings, with second servings encouraged

    g) Psychological or physical disturbances evaluated

    h) Adequate rest to avoid overfatigue

7. Discussion should include:

a. The child is becoming more aware of physical sexual differences and the effects of body changes

b. Sex education should include information concerning reproduction and should also help the child to develop a desirable attitude toward the body, sex, and sexual role in order to develop into a mature person

c. Parents' actions toward each other and their children influence the child's concept of the male or female role

d. The best teaching can be done by parents who feel comfortable and relaxed with their role; for parents who feel insecure about such teaching, there are many pamphlets available for all ages of children

e. As children near puberty, they should be told about physical changes which will occur; in today's society the child is exposed to misleading and superficial views of sex

8. Discussion should include:

a. Children should not be expected to have the judgment and knowledge of an adult but they should be respected as individuals with certain rights and privileges

b. The parent's role in discipline is to set standards, to indicate necessary limits, and to protect the child from physical and emotional injury

c. A child needs to feel the parents' disapproval for misbehavior but also needs to feel that the home is a safe, secure place where he/she is loved

d. Punishment is useful only when the child learns constructively from it; punishment should be suited to the misbehavior and should follow the misbehavior as soon as possible so the two will be associated

e. Disciplinary measures should be suited to the child's age and explained appropriately

f. Discipline should be consistent and neither too strict nor too permissive; its chief function should be to help the child develop self-control and self-direction

9. Evaluated to the satisfaction of the instructor.

CARING FOR THE HOSPITALIZED SCHOOL-AGE CHILD
UNIT IX

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to discuss conditions for which the school-age child may be hospitalized and describe treatment and nursing responsibilities for these conditions. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with school-age illnesses to the correct definitions.
2. Discuss hospitalization of the school-age child.
3. Discuss incidence, etiology, symptoms, prognosis, and nursing responsibilities of rheumatic fever.
4. Discuss appendicitis in the school-age child, including anatomy and physiology, symptoms, prognosis, treatment, complications, and nursing responsibilities.
5. Describe the classification of burns by depth and by extent as determined by Rule of Nines for adults.
6. List causes of burns in children.
7. Discuss first aid, treatment, dressings and care of the burned area, and nursing responsibilities for the burned child.
8. Discuss symptoms and treatment and nursing responsibilities of pediculosis.
9. Describe diabetes mellitus and its incidence in children.
10. List symptoms of juvenile diabetes.
11. Discuss the treatment of diabetes by diet, insulin, and exercise.
12. List causes and symptoms of diabetic acidosis or coma.
13. Discuss nursing responsibilities in the treatment of diabetic acidosis or coma.
14. List causes and symptoms of insulin shock or hypoglycemia in diabetics.
15. Discuss the nursing responsibilities for insulin shock or hypoglycemia.

16. Compare the recovery of a person from diabetic acidosis and from insulin shock.

17. Discuss the education of the child and the parents, listing specific instructions which should be included.

18. Discuss psychological and emotional support for the diabetic child and the parents.

19. Plan activities for the child with rheumatic fever.

CARING FOR THE HOSPITALIZED SCHOOL-AGE CHILD
UNIT IX

SUGGESTED ACTIVITIES

I. Instructor:

A. Provide students with objective sheet.

B. Provide students with information sheet.

C. Discuss terminal and specific objectives.

D. Discuss information and assignment sheets.

E. Contact the Shriner or Masonic organization to present a film and discussion of the care of burn patients in their hospitals.

(NOTE: In Oklahoma contact the Shrine Mosque in Oklahoma City or the Shrine Temple in Tulsa.)

F. Assist with assignment sheet.

G. Give test.

II. Student:

A. Read objectives.

B. Study information sheet.

C. Participate in discussion.

D. Complete assignment sheet.

E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

A. Objectives

B. Information sheet

C. Transparency master: TM 1--Rule of Nines Burn Chart

D. Assignment Sheet #1--Plan Activities for the Child with Rheumatic Fever

E. Answers to assignment sheet

F. Test

G. Answers to test

II. References:

A. Broadribb, Violet, and Charlotte Corliss. *Maternal-Child Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1971.

B. Brunner, Lillian S. et al. *The Lippincott Manual of Nursing Practice.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1974.

C. Galloway, John A. *Diabetes Mellitus.* Indianapolis, Indiana: Eli Lilly and Company, 1973.

D. Thompson, Eleanor D. *Pediatrics for Practical Nurses.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1970.

E. Thompson, Ella M., and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

III. Other materials:

A. Films

1. "Rheumatic Heart Disease." National Medical Audiovisual Center, Atlanta, Georgia 30334.

2. "Stop Rheumatic Fever." National Medical Audiovisual Center.

(NOTE: The above films are available to Oklahoma instructors from the Oklahoma State Department of Health.)

3. "My Friend EDI." Eli Lilly and Company.

B. Filmstrips

1. "Admission and Orientation of the Child." Trainex Corporation.

2. "Stephen Goes to the Hospital." Trainex Corporation.

3. "Parents and Their Ill Child." Trainex Corporation.

4. "Preparing the Child for Procedures." Trainex Corporation.

5. "Acute Rheumatic Fever." Medical Electronic Educational Services, Inc., 29423 West Six Mile Road, Livonia, Michigan 48152.

C. Periodicals

1. Grossman, Burton J. "Rheumatic Fever: Declining but Still Dreaded." *The Journal of Practical Nursing*, February 1974.
2. Sheehy, Elizabeth. "Nursing the Acutely Burned Child." *RN*, August 1974.
3. Hodge, Bobbie et al. "Scoliosis: Affectionate Yet Firm Postoperative Nursing Care." *Nursing '74*, August.
4. Kahn, Howard. "Visual Dysfunctions in Children." *Nursing '74*, October.
5. Green, Carol. "Understanding Children's Needs Through Therapeutic Play." *Nursing '74*, October.

CARING FOR THE HOSPITALIZED SCHOOL-AGE CHILD
UNIT IX

INFORMATION SHEET

I. Terms and definitions

  A. Collagen disease--Any of various clinical conditions which cause deterioration of the connective tissues

  B. Rheumatic fever--Systemic collagen disease which is particularly harmful to the heart and appears to be a sensitivity reaction to the products of the hemolytic streptococcus

  C. Polyarthritis--Migratory type of arthritis which moves from one major joint to another or involves several joints

  D. Chorea--Central nervous system involvement characterized by emotional instability, purposeless movements, and muscular weakness

  E. Carditis--Inflammation of the heart

  F. Precordial--Pertaining to the portion of the chest covering the heart

  G. Louse--Ectoparasite of birds and mammals which may be a vector of disease and which produces an irritating dermatitis

  (NOTE: An ectoparasite is a parasite that lives on the exterior of its host.)

  H. Pediculosis--Skin disease due to infestation by lice

  I. Nit--Egg or larva of the louse

  J. Polydipsia--Excessive thirst

  K. Polyphagia--Constant hunger

  L. Polyuria--Excessive secretion and discharge of urine

  M. Glucose tolerance test--Series of blood and urine tests to determine a person's response to a specific amount of glucose

II. Hospitalization

  A. The child has had more contact with adults and other children and is not quite as prone to separation anxiety as a younger child

  B. The child's concept of time is more advanced; he/she is able to understand that hospitalization is a temporary situation and that parents can only be present at certain times

INFORMATION SHEET

C. Explanations can be made using scientific terminology for body parts and medical procedures to aid the child's natural interest in learning

D. Emotional reactions in the six- to nine-year age group are influenced by fantasies and fear of mutilation; older children may be distressed by financial worries or loss of peer status

E. The child may be troubled with guilt feelings if responsibility for the injury or illness is felt

F. Allowing the older child to assist in own care and in the care of other patients may aid in adjustment for the child and the ones helped

G. Provision for time and assistance with education should be included in the nursing care plan

    1. Prepare child for teaching session
    2. Provide chair for teacher
    3. Disturb as little as possible during teaching session
    4. Provide time each day for preparation of assignments

III. Rheumatic fever

A. Incidence

    1. Occurs most frequently between ages of five and fifteen
    2. May recur
    3. Occurs more often in winter and spring
    4. Is influenced by economic and environmental conditions
    5. Is the leading cause of acquired heart disease in children
    6. Tends to run in families

B. Etiology--Exact cause unknown; generally preceded by a hemolytic streptococcal infection

C. Symptoms

    1. Irregular, low grade fever
    2. Polyarthritis
        a. Joints become hot, swollen, and painful to touch or movement
        b. Despite the extreme pain, this type of arthritis does not cause crippling deformities as rheumatoid arthritis does

INFORMATION SHEET

3. Chorea (Sydenham's chorea)
    a. Gradual onset of purposeless, involuntary movements of the muscles is due to involvement of the central nervous system
    b. Intensity may increase
    c. Symptoms may recur but eventually disappear
4. Carditis
    a. Is the most serious manifestation and the major cause of death or permanent disability
    b. May occur alone or with either chorea or polyarthritis
    c. May cause mild or severe pain
    d. May involve myocardium, pericardium, endocardium, and/or mitral valve
    e. May cause enlargement of the heart or narrowing of the mitral valve
5. Rash
    a. Recurrent, characteristic pink rash appears on the trunk or extremities; face is never involved
    b. Rash migrates from place to place
6. Subcutaneous nodules--Firm, painless, shot-like lumps may appear on the surface of the joints, particularly the elbows, knees, and wrists
7. Abdominal pain
8. Rapid pulse during sleep
9. Listlessness
10. Anorexia
11. Epistaxis
12. Dyspnea on exertion

INFORMATION SHEET

D. Prognosis

1. Prompt, adequate treatment of streptococcal infections decreases risk of rheumatic fever
2. Discovery and use of antibiotics has decreased incidence of damage and complications
3. Chance of recovery without residual heart damage is good if treatment is begun early
4. Recurrent infections may cause further damage
5. Convalescence may be lengthy

E. Nursing responsibilities

1. Plan nursing care to avoid excess movement and fatigue for the child
2. Provide bed rest and limit activity throughout convalescence to minimize heart damage
3. Administer medications as prescribed
4. Support joints with the hands during movement
5. Provide special skin care, particularly over pressure areas
6. Monitor intake and output
7. Check vital signs at designated intervals
    a. Count pulse one full minute to observe irregularities
    b. Check pulse during sleep
8. Use whatever measures are necessary to protect patient from another infection
9. Explain treatments and procedures to the child and parents including purposes of treatments
10. Provide adequate diet which is essential to recovery; observe food intake
11. Provide diversional activity geared to the condition of the child

INFORMATION SHEET

12. Assist the child to maintain contact with peers
    a. Encourage correspondence
    b. Provide telephone contacts
    c. Place in a room with a child of approximately the same age
13. Participate in preparation of the child and the parents for discharge and follow-up care
    a. Stress the importance of keeping the child quiet for an extended period of time
    b. Avoid exposure to infections and drafts
    c. Provide specific information concerning amount of activity, diet, medications, and home assistance
    d. Instruct concerning symptoms to report to the physician
    e. Assist with appointments for medical care as needed
    f. Plan for and assist with school work
    g. Inform the family of local, state, or national agencies which provide supportive services in the community

IV. Appendicitis

A. Anatomy and physiology

1. The appendix, a slender tube consisting of lymphoid tissue, is attached to the cecum, the first portion of the large intestine
2. Obstruction of the lumen of the appendix is the primary cause of appendicitis

B. Symptoms

1. In the older child--Similar to those of an adult
    a. Nausea
    b. Vomiting
    c. Abdominal pain or tenderness
    d. Fever

INFORMATION SHEET

        e. Constipation

        f. Increased white cell count

    2. In the younger child--May be obscure

        a. Restlessness

        b. Irritability

        c. Low grade fever with flushed face

        d. Mild elevation of white cell count

        (NOTE: Since these symptoms are indicative of many of the childhood diseases, the diagnosis of appendicitis in a younger child is more difficult to establish.)

C. Prognosis--Very good

(NOTE: Even in instances of perforation, mortality rate is less than one percent.)

D. Treatment--Surgical removal as soon as possible after diagnosis

E. Complications

    1. Perforated or ruptured appendix

    2. Peritonitis

F. Nursing responsibilities

    1. Preoperative

        a. Apply ice bag to lower right quadrant if prescribed

        b. Do not give any laxatives or enemas

        c. Provide other care as indicated

    2. Postoperative--Provide care as for other abdominal surgery

V. Burn classifications

A. Depth

    1. First degree or superficial

        a. Skin becomes reddened but there is no damage to underlying tissues and nerve endings

        b. Symptoms include redness, swelling, and pain

INFORMATION SHEET

2. Second degree or partial thickness
    a. Blisters appear with an escape of body plasma; epidermis and underlying tissues are injured
    b. Symptoms include redness, swelling, blisters, and pain
3. Third degree or total thickness
    a. Epidermis, underlying tissues, and nerve endings are severely injured or destroyed
    b. Symptoms are minimal pain and absence of skin and underlying tissues; depending upon cause, remaining tissues may appear charred

(NOTE: Some authorities list fourth degree burns to indicate any burns which severely injure or destroy deeper tissues than the skin and subcutaneous tissue. Fourth degree burns would include any destruction of nerves, blood vessels, muscle, and bone.)

B. Extent--Rule of Nines (Transparency 1)

Age		One year	Five years	Twelve years to adult
1.	Head	18	14	10
2.	Each arm	9	9	9
3.	Front or back of body	18	18	18
4.	Each leg	14	16	18

VI. Causes of burns in children

A. Stove

B. Heater

C. Vaporizor

D. Radiator

E. Iron

F. Fireplace

INFORMATION SHEET

G. Hot water, hot pack, or heating pad

H. Cooking utensil or coffee pot

I. Defective wiring

J. Unguarded electrical outlet

K. Strong acid or alkali such as ammonia or lye

L. Open fire

M. Matches

VII. Burn treatment

(NOTE: Prognosis in treatment of burns depends upon the depth and extent of the burns. Prognosis is usually poor to fatal if one-third to one-half of the child's body receives second and third degree burns.)

A. First aid

1. Apply cold by immersing part in cold water or applying cool moist dressings
2. Cover any open lesions or damaged tissues with sterile dressings
3. Obtain medical help

B. Treatment

1. Prevention of shock and the toxic condition caused by the burn
2. Analgesics such as morphine or codeine
3. Intravenous fluids or plasma
4. Oxygen as indicated
5. Tetanus injections, either antitoxin or toxoid booster

C. Dressings and care of the burned area

1. Open technique
    a. Wound is cleansed as needed; no covering is applied
    b. Protective crust called *eschar* forms, preventing fluid loss
    c. Protective isolation or reverse isolation is used by personnel to prevent secondary infection

INFORMATION SHEET

2. Closed technique
    a. Burned areas are tightly bandaged to prevent fluid loss
    b. Dressings remain in place as long as two or three weeks
3. Wet dressings
    a. Dressings moistened with the prescribed solution are applied and renewed frequently, usually several times daily
    b. Moisture helps loosen the eschar in preparation for skin grafts
    c. Antiseptic solutions, such as 0.5% silver nitrate, aid in reducing secondary infections
4. Debridement and grafting
    a. Debridement is done to clean the wound as necessary to prepare the granulation tissue for grafting
    b. Grafts may be *homografts,* skin taken from another person, or *autografts,* skin from the patient's own body
    c. Homografts eventually slough off but provide temporary protection
    d. Donor as well as graft sites are covered with sterile dressings

D. Nursing responsibilities

1. Provide nursing care as needed depending upon the age of the patient, the area involved, and the type of treatment used
2. Maintain aseptic technique to prevent secondary infection
    a. Wash hands
    b. Use sterile dressings
    c. Keep dressings clean and dry
    d. Maintain reverse isolation when burned areas are extensive
3. Use restraints as necessary to keep the child from touching the affected area
4. Keep accurate intake and output

INFORMATION SHEET

5. Provide adequte fluid intake

   (NOTE: Fluids are essential to aid the body in eliminating waste products, preventing kidney damage, and maintaining body fluid requirements.)

6. Change position frequently

7. Observe for symptoms of shock

   a. Increased pulse and respiration

   b. Decreased blood pressure

   c. Decreased temperature

   d. Cold, pale, clammy skin

8. Observe for symptoms of infection

   a. Elevation of vital signs

   b. Restlessness

   c. Increased pain or inflammation

   d. Foul odor of drainage or dressings

9. Keep bed linens dry, clean, and free of wrinkles or crumbs

10. Provide as necessary for the child's comfort

    a. Use a cradle or other device to hold the weight of covers

    b. Keep room clean and odor free

    c. Provide frequent mouth care

    d. Give analgesic as prescribed

11. Provide emotional support

    a. Assist child and parents to cope with guilt feelings

    b. Maintain a calm but firm manner when the child takes out frustrations on nursing personnel

       (NOTE: Convalescence from burns may require long or frequent hospitalization. Dressing changes and treatments may be lengthy or painful. Crying, screaming, or rebelling are ways a child tries to take out frustrations.)

INFORMATION SHEET

c. Provide toys, mobiles, and other diversions as the child is able to use them

d. Permit the parents to share in the care of the child

e. Assist and encourage the child to help with own care as condition improves

VIII. Pediculosis

A. Symptoms

1. Severe itching of the scalp or other hairy parts of the body

2. Pustules and excoriations in or near affected areas

B. Treatment and nursing responsibilities

1. Remove lice and nits from the affected area

a. Nits may be removed by combing the hair with a fine tooth comb which has been dipped in hot vinegar

b. Hair and scalp can be cleansed with a shampoo containing a pediculocide

(CAUTION: Use such preparations according to manufacturer's instructions since they can be irritating to skin and mucous membranes.)

2. Treat any infections of the face and scalp

3. Boil or launder clothing and bedding with a pesticide

4. Instruct child not to wear another's headgear

5. Prevent or minimize further infestation by proper cleansing of hair and scalp and by periodic examinations

IX. Diabetes mellitus--Description and incidence

A. The body cannot utilize carbohydrates properly due to a deficiency of insulin which is produced by the pancreas

B. Cause and cure is unknown; it is inherited as a recessive gene characteristic

C Onset in children is more often between the ages of four and twelve

D. Acute infections may have some influence on its activation

INFORMATION SHEET

- E. Approximately 120,000 children under the age of fifteen have the condition
- F. It is a more severe condition when it occurs in childhood than when it occurs in later life

X. Symptoms of juvenile diabetes

- A. Polydipsia
- B. Polyphagia
- C. Polyuria
- D. Weight loss
- E. Irritability
- F. Occurrence of furuncles
- G. Glycosuria
- H. Hyperglycemia

XI. Treatment of diabetes

- A. Diet
  - 1. Measured
    - a. All foods are measured and given in prescribed amounts
    - b. Exchange lists are used to provide variety in diet planning
    - c. Standard household utensils are used to measure the portions
    - d. The child must follow the pattern prescribed and eat the same amounts at each meal every day
  - 2. Free selection
    - a. Regular and consistent meals are needed, but the child is permitted to eat as desired as long as weight remains normal and there is no acetone in the urine or other complications
    - b. Excessive carbohydrate intake and between-meal snacks are discouraged
    - c. A bedtime snack may be eaten to prevent insulin reaction during the night when long-acting insulin is given

INFORMATION SHEET

   d. Adjustments are made in the diet by the physician and/or dietitian as necessary to assure that essential amounts of calories, protein, minerals, and vitamins are included

   e. The physician is consulted when acetone appears in the urine or when any difficulty is encountered

B. Insulin

  1. The child will probably always have to take insulin; oral hypoglycemics have not proven satisfactory in administration to children

  2. The type and amount of insulin to be given is determined by the physician and depends upon the child's age, activities, and general physical condition

  3. Many children can be maintained on intermediate or long-acting type of insulin after stabilization

  4. Adjustment of dosage may be required

     a. After control is established because need for insulin may decrease

     b. As the child grows older because dosage may need increasing

     c. During illness or with any change of the child's health

     d. When insulin reactions occur frequently

     e. If more than a small amount of glucose spills in the urine persistently

     f. As a result of strenuous exercise

  5. Insulin sites should be rotated in a systematic sequence to aid absorption and avoid injury to the injection sites

  6. Diabetes in children is an unstable condition and children are more apt to have insulin reactions than most adult diabetics

     (NOTE: Unstable diabetes is also called brittle or labile diabetes.)

C. Exercise

  1. Causes the body to use more glucose thereby reducing insulin requirement

  2. Increases circulation

INFORMATION SHEET

3. May cause hypoglycemia; any diabetic participating in strenuous exercise should carry sugar or hard candy to eat if hypoglycemia occurs

4. Should be done shortly after meals when blood sugar is highest

5. Should be supervised to prevent needless reactions; the diabetic child should be cautioned against hiking, biking, or swimming unattended

XII. Diabetic acidosis or coma

A. Causes

1. Insufficient dosage of insulin
2. Omission of insulin dosage
3. Increased or improper food intake
4. Illness, infection, exposure, or surgery

B. Symptoms

1. Thirst
2. Headache
3. Nausea
4. Vomiting
5. Abdominal pain
6. Anorexia
7. Hot, flushed skin
8. Drowsiness or lethargy
9. Frequency of urination

INFORMATION SHEET

10. Acetone breath
11. Air hunger or Kussmaul breathing

    (NOTE: Kussmaul breathing is very deep but not labored. It is a symptom of profound acidosis.)
12. Unconsciousness
13. Urine tests positive for glucose and acetone
14. High blood sugar
15. Soft, sunken eyeballs

XIII. Nursing responsibilities in diabetic acidosis or coma

- A. Obtain medical assistance
- B. Administer insulin
- C. Give fluids orally or intravenously as prescribed

XIV. Insulin shock or hypoglycemia in diabetics

- A. Causes
    1. Overdose of insulin
    2. Poorly planned exercise

       Example: Strenuous exercise before meals
    3. Reduction of food intake, such as during illness or from missing meals
    4. Improvement of condition so less insulin is needed
    5. Instability of juvenile diabetes
- B. Symptoms
    1. Irritability
    2. Pallor
    3. Hunger
    4. Weakness
    5. Excessive perspiration

INFORMATION SHEET

6. Mental confusion or inability to concentrate
7. Muscular incoordination
8. No sugar or acetone in the urine
9. Low blood sugar
10. Convulsions and/or coma if untreated

XV. Nursing responsibilities for insulin shock or hypoglycemia

A. Administer sugar or beverages and foods containing sugar immediately

(NOTE: Orange juice, carbonated beverages, candy, and ice cream contain significant amounts of readily absorbed sugar.)

B. Keep patient warm

C. Give nothing by mouth if the patient is unconscious

D. Obtain medical attention if the patient does not respond to treatment promptly or is unconscious

XVI. Recovery from diabetic acidosis and insulin shock

A. Recovery from diabetic acidosis is slow, over a period of hours

B. Recovery from insulin shock usually takes place very quickly

XVII. Education of the child and the parents

A. Instruction, ideally, should be started as soon as the diagnosis is confirmed

B. The sessions are usually conducted by the physician, dietitian, and registered nurse

C. Instructions should be given in terms the parents and/or the child can understand

D. It should not be assumed that the parents or the child know very much about diabetes unless they have had previous contact with a diabetic person

E. Information may need to be repeated or clarified in later sessions

(NOTE: The parents may be upset at the time the diagnosis is made or may not be able to remember or comprehend all they are told.)

F. Printed instructions or pamphlets should be provided which the parents and/or the child can keep for further study

INFORMATION SHEET

G. Instructions should include

   1. Type and amount of insulin to be given
   2. Preparation and injection of insulin including rotation of sites
   3. Dietary information with meal plans and exchange lists
   4. When and how urine is to be tested
   5. Symptoms of acidosis and insulin reaction
   6. Personal care with special attention to the feet, hands, and teeth
   7. Importance of yearly eye examinations

H. The child should learn to give insulin injections as soon as capable

(NOTE: Children seven to ten years old can usually be taught to give their own injections. Children as young as four or five years may be able to test their urine for sugar.)

XVIII. Psychological and emotional support

A. Reassure the parents that with proper control and supervision the child will lead a normal life

B. Permit the child to take an increasing amount of responsibility in the management of the condition

C. Encourage the child to participate in sports and other school activities

D. Instruct the child and the parents to tell a teacher, Scout leader, trip sponsor, or other person that the child is a diabetic

(NOTE: When the child is away from the parents for any length of time, it is important for another responsible person to be aware of the diabetes and to know what to do in case of a reaction.)

E. Encourage the parents to report to the physician

   1. Any change in the child's health
   2. Recurring insulin reactions

INFORMATION SHEET

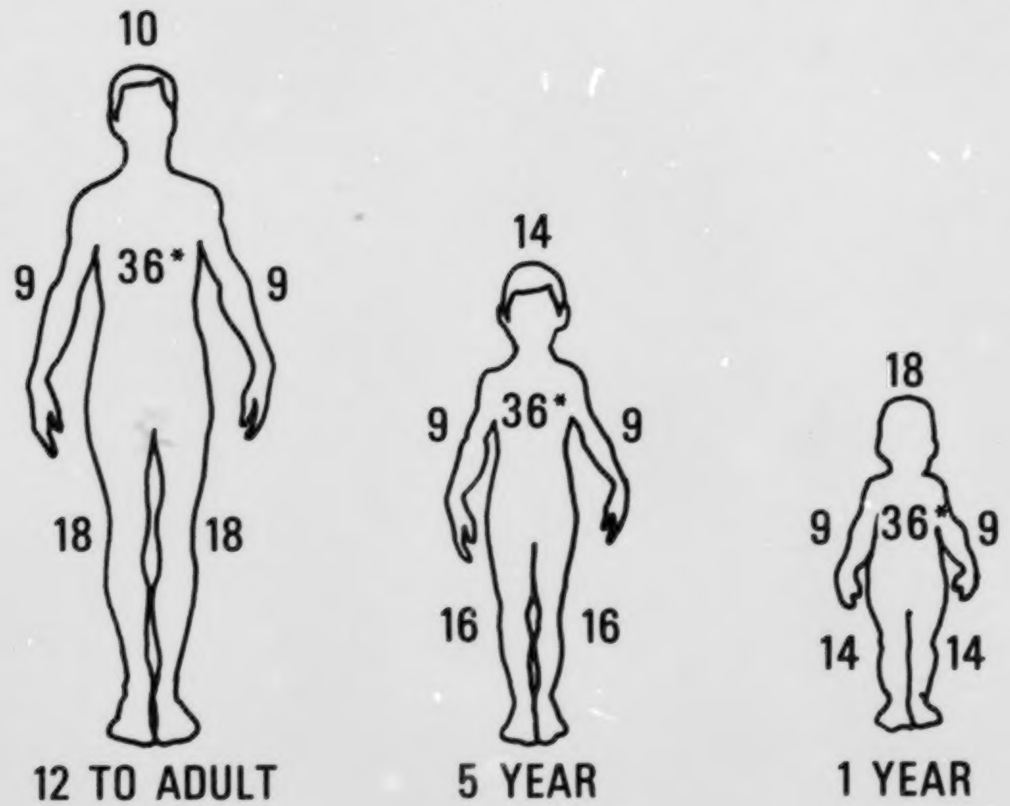
3. Persistance of sugar in the urine

4. Any difficulty in diet or insulin administration

(NOTE: Usually the child is adjusted to show about 1+ on urine testing for sugar. It is believed to be better for the child to spill a little sugar than to risk the incidence of insulin reactions.)

F. Inform the family of the American Diabetes Association, which may have a local chapter

Rule of Nines Burn Chart


10
9
36*
9
18
18
12 TO ADULT
14
9
36*
9
16
16
5 YEAR
18
9
36*
9
14
14
1 YEAR

*18 anterior, 18 posterior

CARING FOR THE HOSPITALIZED SCHOOL-AGE CHILD
UNIT IX

ASSIGNMENT SHEET #1--PLAN ACTIVITIES FOR THE CHILD WITH RHEUMATIC FEVER

Make a list of activities for the child who is on complete bed rest; the child whose activity is restricted to quiet activity; and the child who can be up for short periods of time.

CARING FOR THE HOSPITALIZED SCHOOL-AGE CHILD
UNIT IX

ANSWERS TO ASSIGNMENT SHEET

(NOTE: These are suggested answers. There may be others.)

For child on complete bed rest

1. Aquarium
2. Window to view outdoor activity
3. Windowsill bird feeder
4. Television viewing for short periods
5. Story telling or reading stories to patient
6. Mobile near bed

For child restricted to quiet activity

1. Pictures to color with crayons or pencils
2. Soap carving
3. Paper dolls or other pictures to cut out
4. Simple card games or picture cards
5. Reading for short periods
6. Pencil-paper activities such as puzzle books
7. Simple puzzles, such as jigsaw or metal, and plastic puzzles to take apart and put together
8. Handcrafts such as weaving, knitting, or embroidery
9. Doll to dress and undress

For child who can be up for short periods of time

1. Table games with other patients or family
2. Reading
3. Constructing models
4. Correspondence with friends

5. Pasting get-well cards in scrapbook
6. Large jigsaw puzzles to put together
7. Puppet play

N II - 353-D

CARING FOR THE HOSPITALIZED SCHOOL-AGE CHILD
UNIT IX

TEST

1. Match the terms on the right to the correct definition.

______a. Any of various clinical conditions which cause deterioration of the connective tissues

______b. Central nervous system involvement characterized by emotional instability, purposeless movements, and muscular weakness

______c. Egg or larva of the louse

______d. Excessive thirst

______e. Systemic collagen disease which is particularly harmful to the heart and appears to be a sensitivity reaction to the products of the hemolytic streptococcus

______f. Series of blood and urine tests to determine a person's response to a specific amount of glucose

______g. Pertaining to the portion of the chest covering the heart

______h. Ectoparasite of birds and mammals which may be a vector of disease and which produces an irritating dermatitis

______i. Migratory type of arthritis which moves from one major joint to another or involves several joints

______j. Skin disease due to infestation by lice

______k. Inflammation of the heart

______l. Constant hunger

______m. Excessive secretion and discharge of urine

1. Rheumatic fever
2. Pediculosis
3. Carditis
4. Polyarthritis
5. Nit
6. Polyuria
7. Chorea
8. Polyphagia
9. Glucose tolerance test
10. Polydipsia
11. Louse
12. Precordial
13. Collagen disease

2. Discuss hospitalization of the school age child.

3. Discuss rheumatic fever.
   - a. Incidence
   - b. Etiology
   - c. Symptoms

d. Prognosis

e. Nursing responsibilities

4. Discuss appendicitis in the school-age child.

   a. Anatomy and physiology

   b. Symptoms

      1) In the older child

2) In the younger child

c. Prognosis

d. Treatment

e. Complications

f. Nursing responsibilities

1) Preoperative

2) Postoperative

5. Describe the depth and the extent of burns as determined by the Rule of Nines for adults.

a. Depth

b. Extent

6. List eight causes of burns in children.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

7. Discuss first aid, treatment, dressings and care of the burned area, and nursing responsibilities for the burned child.

   a. First aid

b. Treatment

c. Dressings and care of the burned area

  1) Open technique

  2) Closed technique

  3) Wet dressings

  4) Debridement and grafting

d. Nursing responsibilities

8. Discuss pediculosis.

   a. Symptoms

   b. Treatment and nursing responsibilities

9. Describe diabetes mellitus and its incidence in children.

10. List five symptoms of juvenile diabetes.

    a.

    b.

    c.

    d.

    e.

11. Discuss the treatment of diabetes by diet, insulin, and exercise.
    a. Diet

    b. Insulin

c. Exercise

12. List three causes and ten symptoms of diabetic acidosis or coma.

a. Causes

1)

2)

3)

b. Symptoms

1)

2)

3)

4)

5)

6)

7)

8)

9)

10)

13. Discuss nursing responsibilities in the treatment of diabetic acidosis or coma.

14. List three causes and eight symptoms of insulin shock or hypoglycemia in diabetics.

    a. Causes

        1)

        2)

        3)

    b. Symptoms

        1)

        2)

        3)

        4)

        5)

        6)

        7)

        8)

15. Discuss the nursing responsibilities for insulin shock or hypoglycemia.

16. Compare the recovery of a person from diabetic acidosis and from insulin shock.

17. Discuss the education of the child and the parents, listing specific instructions which should be included.

18. Discuss psychological and emotional support for the diabetic child and the parents.

19. Plan activities for the child with rheumatic fever.

(NOTE: If this has not been accomplished prior to the test, ask the instructor when the above activity should be completed.)

CARING FOR THE HOSPITALIZED SCHOOL-AGE CHILD
UNIT IX

ANSWERS TO TEST

1. a. 13
   b. 7
   c. 5
   d. 10
   e. 1
   f. 9
   g. 12
   h. 11
   i. 4
   j. 2
   k. 3
   l. 8
   m. 6

2. Discussion should include:
   a. The child has had more contact with adults and other children and is not quite as prone to separation anxiety as a younger child
   b. The child's concept of time is more advanced; he/she is able to understand that hospitalization is a temporary situation and that parents can only be present at certain times
   c. Explanations can be made using scientific terminology for body parts and medical procedures to aid the child's natural interest in learning
   d. Emotional reactions in the six- to nine-year age group are influenced by fantasies and fear of mutilation; older children may be distressed by financial worries or loss of peer status
   e. The child may be troubled with guilt feelings if responsibility for the injury or illness is felt
   f. Allowing the older child to assist in own care and in the care of other patients may aid in adjustment for the child and the ones helped
   g. Provision for time and assistance with education should be included in the nursing care plan
      1) Prepare child for teaching session
      2) Provide chair for teacher
      3) Disturb as little as possible during teaching session
      4) Provide time each day for preparation of assignments

3. Discussion should include:
   a. Incidence
      1) Occurs most frequently between ages of five and fifteen
      2) May recur
      3) Occurs more often in winter and spring
      4) Is influenced by economic and environmental conditions
      5) Is the leading cause of acquired heart disease in children
      6) Tends to run in families
   b. Etiology--Exact cause unknown; generally preceded by a hemolytic streptococcal infection
   c. Symptoms
      1) Irregular, low grade fever
      2) Polyarthritis
         a) Joints become hot, swollen, and painful to touch or movement
         b) Despite the extreme pain, this type of arthritis does not cause crippling deformities as rheumatoid arthritis does
      3) Chorea (Sydenham's chorea)
         a) Gradual onset of purposeless, involuntary movements of the muscles is due to involvement of the central nervous system
         b) Intensity may increase
         c) Symptoms may recur but eventually disappear
      4) Carditis
         a) Is the most serious manifestation and the major cause of death or permanent disability
         b) May occur alone or with either chorea or polyarthritis
         c) May cause mild or severe pain
         d) May involve myocardium, pericardium, endocardium, and/or mitral valve
         e) May cause enlargement of the heart or narrowing of the mitral valve

5) Rash
   a) Recurrent, characteristic pink rash appears on the trunk or extremities; face is never involved
   b) Rash migrates from place to place
6) Subcutaneous nodules--Firm, painless, shot-like lumps may appear on the surface of the joints, particularly the elbows, knees, and wrists
7) Abdominal pain
8) Rapid pulse during sleep
9) Listlessness
10) Anorexia
11) Epistaxis
12) Dyspnea on exertion

d. Prognosis

1) Prompt, adequate treatment of streptococcal infections decreases risk of rheumatic fever
2) Discovery and use of antibiotics has decreased incidence of damage and complications
3) Chance of recovery without residual heart damage is good if treatment is begun early
4) Recurrent infections may cause further damage
5) Convalescence may be lengthy

e. Nursing responsibilities

1) Plan nursing care to avoid excess movement and fatigue for the child
2) Provide bed rest and limit activity throughout convalescence to minimize heart damage
3) Administer medications as prescribed
4) Support joints with the hands during movement
5) Provide special skin care, particularly over pressure areas
6) Monitor intake and output

7) Check vital signs at designated intervals

   a) Count pulse one full minute to observe irregularities

   b) Check pulse during sleep

8) Use whatever measures are necessary to protect patient from another infection

9) Explain treatments and procedures to the child and parents including purposes of treatments

10) Provide adequate diet which is essential to recovery; observe food intake

11) Provide diversional activity geared to the condition of the child

12) Assist the child to maintain contact with peers

   a) Encourage correspondence

   b) Provide telephone contacts

   c) Place in a room with a child of approximately the same age

13) Participate in preparation of the child and the parents for discharge and follow-up care

   a) Stress the importance of keeping the child quiet for an extended period of time

   b) Avoid exposure to infections and drafts

   c) Provide specific information concerning amount of activity, diet, medications, and home assistance

   d) Instruct concerning symptoms to report to the physician

   e) Assist with appointments for medical care as needed

   f) Plan for and assist with school work

   g) Inform the family of local, state, or national agencies which provide supportive services in the community

4. Discussion should include:

   a. Anatomy and physiology

      1) The appendix, a slender tube consisting of lymphoid tissue, is attached to the cecum, the first portion of the large intestine

      2) Obstruction of the lumen of the appendix is the primary cause of appendicitis

b. Symptoms

- 1) In the older child--Similar to those of an adult
    - a) Nausea
    - b) Vomiting
    - c) Abdominal pain or tenderness
    - d) Fever
    - e) Constipation
    - f) Increased white cell count
- 2) In the younger child--May be obscure
    - a) Restlessness
    - b) Irritability
    - c) Low grade fever with flushed face
    - d) Mild elevation of white cell count

c. Prognosis--Very good

d. Treatment--Surgical removal as soon as possible after diagnosis

e. Complications

- 1) Perforated or ruptured appendix
- 2) Peritonitis

f. Nursing responsibilities

- 1) Preoperative
    - a) Apply ice bag to lower right quadrant if prescribed
    - b) Do not give any laxatives or enemas
    - c) Provide other care as indicated
- 2) Postoperative--Provide care as for other abdominal surgery

5. Description should include:
   a. Depth
      1) First degree or superficial
         a) Skin becomes reddened but there is no damage to underlying tissues and nerve endings
         b) Symptoms include redness, swelling, and pain
      2) Second degree or partial thickness
         a) Blisters appear with an escape of body plasma; epidermis and underlying tissues are injured
         b) Symptoms include redness, swelling, blisters, and pain
      3) Third degree or total thickness
         a) Epidermis, underlying tissues, and nerve endings are severely injured or destroyed
         b) Symptoms are minimal pain and absence of skin and underlying tissues; depending upon cause, remaining tissues may appear charred
   b. Extent

      Rule of Nines applies to the twelve-year-old to adult age group; head equals ten percent and each arm equals nine percent of total body surface; front or back of body and each leg equals eighteen percent of body surface

6. Any eight of the following:
   a. Stove
   b. Heater
   c. Vaporizor
   d. Radiator
   e. Iron
   f. Fireplace
   g. Hot water, hot pack, or heating pad
   h. Cooking utensil or coffee pot
   i. Defective wiring

j. Unguarded electrical outlet

k. Strong acid or alkali such as ammonia or lye

l. Open fire

m. Matches

7. Discussion should include:

a. First aid

1) Apply cold by immersing part in cold water or applying coo moist dressings

2) Cover any open lesions or damaged tissues with sterile dressings

3) Obtain medical help

b. Treatment

1) Prevention of shock and the toxic condition caused by the burn

2) Analgesics such as morphine or codeine

3) Intravenous fluids or plasma

4) Oxygen as indicated

5) Tetanus injections, either antitoxin or toxoid booster

c. Dressings and care of the burned area

1) Open technique

a) Wound is cleansed as needed; no covering is applied

b) Protective crust called *eschar* forms, preventing fluid loss

c) Protective isolation or reverse isolation is used by personnel to prevent secondary infection

2) Closed technique

a) Burned areas are tightly bandaged to prevent fluid loss

b) Dressings remain in place as long as two or three weeks

3) Wet dressings

a) Dressings moistened with the prescribed solution are applied and renewed frequently, usually several times daily

b) Moisture helps loosen the eschar in preparation for skin grafts

c) Antiseptic solutions, such as 0.5% silver nitrate, aid in reducing secondary infections

4) Debridement and grafting

  a) Debridement is done to clean the wound as necessary to prepare the granulation tissue for grafting

  b) Grafts may be *homografts,* skin taken from another person, or *autografts,* skin from the patient's own body

  c) Homografts eventually slough off but provide temporary protection

  d) Donor as well as graft sites are covered with sterile dressings

d. Nursing responsibilities

1) Provide nursing care as needed depending upon the age of the patient, the area involved, and the type of treatment used

2) Maintain aseptic technique to prevent secondary infection

  a) Wash hands

  b) Use sterile dressings

  c) Keep dressings clean and dry

  d) Maintain reverse isolation when burned areas are extensive

3) Use restraints as necessary to keep the child from touching the affected area

4) Keep accurate intake and output

5) Provide adequate fluid intake

6) Change position frequently

7) Observe for symptoms of shock

  a) Increased pulse and respiration

  b) Decreased blood pressure

  c) Decreased temperature

  d) Cold, pale, clammy skin

8) Observe for symptoms of infection

  a) Elevation of vital signs

  b) Restlessness

  c) Increased pain or inflammation

  d) Foul odor of drainage or dressings

- 9) Keep bed linens dry, clean, and free of wrinkles or crumbs
- 10) Provide as necessary for the child's comfort
  - a) Use a cradle or other device to hold the weight of covers
  - b) Keep room clean and odor free
  - c) Provide frequent mouth care
  - d) Give analgesic as prescribed
- 11) Provide emotional support
  - a) Assist child and parents to cope with guilt feelings
  - b) Maintain a calm but firm manner when the child takes out frustrations on nursing personnel
  - c) Provide toys, mobiles, and other diversions as the child is able to use them
  - d) Permit the parents to share in the care of the child
  - e) Assist and encourage the child to help with own care as condition improves

8. Discussion should include:

- a. Symptoms
  - 1) Severe itching of the scalp or other hairy parts of the body
  - 2) Pustules and excoriations in or near affected areas
- b. Treatment and nursing responsibilities
  - 1) Remove lice and nits from the affected area
    - a) Nits may be removed by combing the hair with a fine tooth comb which has been dipped in hot vinegar
    - b) Hair and scalp can be cleansed with a shampoo containing a pediculocide
  - 2) Treat any infections of the face and scalp
  - 3) Boil or launder clothing and bedding with a pesticide
  - 4) Instruct child not to wear another's headgear
  - 5) Prevent or minimize further infestation by proper cleansing of hair and scalp and by periodic examinations

9. Description should include:
    - a. The body cannot utilize carbohydrates properly due to a deficiency of insulin which is produced by the pancreas
    - b. Cause and cure is unknown; it is inherited as a recessive gene characteristic
    - c. Onset in children is more often between the ages of four and twelve
    - d. Acute infections may have some influence on its activation
    - e. Approximately 120,000 children under the age of fifteen have the condition
    - f. It is a more severe condition when it occurs in childhood than when it occurs in later life

10. Any five of the following:
    - a. Polydipsia
    - b. Polyphagia
    - c. Polyuria
    - d. Weight loss
    - e. Irritability
    - f. Occurrence of furuncles
    - g. Glycosuria
    - h. Hyperglycemia

11. Discussion should include:
    - a. Diet
        - 1) Measured
            - a) All foods are measured and given in prescribed amounts
            - b) Exchange lists are used to provide variety in diet planning
            - c) Standard household utensils are used to measure the portions
            - d) The child must follow the pattern prescribed and eat the same amounts at each meal every day
        - 2) Free selection
            - a) Regular and consistent meals are needed, but the child is permitted to eat as desired as long as weight remains normal and there is no acetone in the urine or other complications

b) Excessive carbohydrate intake and between-meal snacks are discouraged

c) A bedtime snack may be eaten to prevent insulin reaction during the night when long-acting insulin is given

d) Adjustments are made in the diet by the physician and/or dietitian as necessary to assure that essential amounts of calories, protein, minerals, and vitamins are included

e) The physician is consulted when acetone appears in the urine or when any difficulty is encountered

b. Insulin

1) The child will probably always have to take insulin; oral hypoglycemics have not proven satisfactory in administration to children

2) The type and amount of insulin to be given is determined by the physican and depends upon the child's age, activities, and general physical condition

3) Many children can be maintained on intermediate or long-acting type of insulin after stabilization

4) Adjustment of dosage may be required

a) After control is established because need for insulin may decrease

b) As the child grows older because dosage may need increasing

c) During illness or with any change of the child's health

d) When insulin reactions occur frequently

e) If more than a small amount of glucose spills in the urine persistently

f) As a result of strenuous exercise

5) Insulin sites should be rotated in a systematic sequence to aid absorption and avoid injury to the injection sites

6) Diabetes in children is an unstable condition and children are more apt to have insulin reactions than most adult diabetics

c. Exercise

1) Causes the body to use more glucose thereby reducing insulin requirement

2) Increases circulation

3) May cause hypoglycemia; any diabetic participating in strenuous exercise should carry sugar or hard candy to eat if hypoglycemia occurs

4) Should be done shortly after meals when blood sugar is highest

5) Should be supervised to prevent needless reactions; the diabetic child should be cautioned against hiking, biking, or swimming unattended

12. a. Any three of the following:

1) Insufficient dosage of insulin

2) Omission of insulin dosage

3) Increased or improper food intake

4) Illness, infection, exposure, or surgery

b. Any ten of the following:

1) Thirst

2) Headache

3) Nausea

4) Vomiting

5) Abdominal pain

6) Anorexia

7) Hot, flushed skin

8) Drowsiness or lethargy

9) Frequency of urination

10) Acetone breath

11) Air hunger or Kussmaul breathing

12) Unconsciousness

13) Urine tests positive for glucose and acetone

14) High blood sugar

15) Soft, sunken eyeballs

13. Discussion should include:

    a. Obtain medical assistance

    b. Administer insulin

    c. Give fluids orally or intravenously as prescribed

14. a. Any three of the following:

        1) Overdose of insulin

        2) Poorly planned exercise

        3) Reduction of food intake, such as during illness or from missing meals

        4) Improvement of condition so less insulin is needed

        5) Instability of juvenile diabetes

    b. Any eight of the following:

        1) Irritability

        2) Pallor

        3) Hunger

        4) Weakness

        5) Excessive perspiration

        6) Mental confusion or inability to concentrate

        7) Muscular incoordination

        8) No sugar or acetone in the urine

        9) Low blood sugar

        10) Convulsions and/or coma if untreated

15. Discussion should include:

    a. Administer sugar or beverages and foods containing sugar immediately

    b. Keep patient warm

    c. Give nothing by mouth if the patient is unconscious

    d. Obtain medical attention if the patient does not respond to treatment promptly or is unconscious

16. Comparison should include:

    a. Recovery from diabetic acidosis is slow, over a period of hours

    b. Recovery from insulin shock usually takes place very quickly

17. Discussion should include:

    a. Instruction, ideally, should be started as soon as the diagnosis is confirmed

    b. The sessions are usually conducted by the physician, dietitian, and registered nurse

    c. Instructions should be given in terms the parents and/or child can understand

    d. It should not be assumed that the parents or the child know very much about diabetes unless they have had previous contact with a diabetic person

    e. Information may need to be repeated or clarified in later sessions

    f. Printed instructions or pamphlets should be provided which the parents and/or the child can keep for further study

    g. Instructions should include

        1) Type and amount of insulin to be given

        2) Preparation and injection of insulin including rotation of sites

        3) Dietary information with meal plans and exchange lists

        4) When and how urine is to be tested

        5) Symptoms of acidosis and insulin reaction

        6) Personal care with special attention to the feet, hands, and teeth

        7) Importance of yearly eye examinations

    h. The child should learn to give insulin injections as soon as capable

18. Discussion should include:

    a. Reassure the parents that with proper control and supervision the child will lead a normal life

    b. Permit the child to take an increasing amount of responsibility in the management of the condition

    c. Encourage the child to participate in sports and other school activities

d. Instruct the child and the parents to tell a teacher, Scout leader, trip sponsor, or other person that the child is a diabetic

e. Encourage the parents to report to the physician

  1) Any change in the child's health

  2) Recurring insulin reactions

  3) Persistance of sugar in the urine

  4) Any difficulty in diet or insulin administration

f. Inform the family of the American Diabetes Association, which may have a local chapter

19. Evaluated to the satisfaction of the instructor.

GROWTH AND DEVELOPMENT OF THE ADOLESCENT
UNIT X

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to describe hormone changes and discuss characteristics of adolescents, mental and social development, care, guidance, and other health factors pertaining to adolescence. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with adolescence to the correct definitions.
2. Discuss general characteristics of adolescence.
3. Describe hormone changes in puberty and adolescence.
4. Discuss characteristics of adolescent girls.
5. Discuss characteristics of adolescent boys.
6. Describe some common effects of puberty on behavior.
7. Discuss the mental and social development of the adolescent.
8. Discuss the care and guidance of the adolescent.
9. Discuss other health factors pertaining to the adolescent.

GROWTH AND DEVELOPMENT OF THE ADOLESCENT
UNIT X

SUGGESTED ACTIVITIES

I. Instructor:

- A. Provide students with objective sheet.
- B. Provide students with information sheet.
- C. Discuss terminal and specific objectives.
- D. Discuss information sheet.
- E. Give test.

II. Student:

- A. Read objectives.
- B. Study information sheet.
- C. Participate in discussion.
- D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

- A. Objectives
- B. Information sheet
- C. Test
- D. Answers to test

II. References:

A. Broadribb, Violet, and Charlotte Corliss. *Maternal-Child Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

B. Hurlock, Elizabeth. *Child Development.* New York: McGraw-Hill Book Company, 1972.

C. Thompson, Eleanor D. *Pediatrics for the Practical Nurse.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1970.

III. Other materials:

A. Films

1. "Puberty in Boys." Films Incorporated, 1144 Wilmette Avenue, Wilmette, Illinois 60091.

2. "Female Cycle." Films Incorporated, 1144 Wilmette Avenue, Wilmette, Illinois 60091.

   (NOTE: The above films are available to Oklahoma instructors from the Curriculum and Instructional Materials Center. The films listed below are available to Oklahoma instructors from the Oklahoma State Department of Health.)

3. "Boy to Man." Churchill Films, 662 North Robertson Boulevard, Los Angeles, California 90069.

4. "Meeting Needs of Adolescence." McGraw-Hill Films.

5. "Discipline During Adolescence." McGraw-Hill Films.

6. "Brian at Seventeen." National Audiovisual Center, Washington, D.C. 20409.

7. "From Ten to Twelve." McGraw-Hill Films.

8. "Developmental Characteristics of Preadolescents." McGraw-Hill Films.

B. Publications

1. Pamphlets and posters. The Life Cycle Center, Kimberly-Clark Corporation, P.O. Box 2001, Neenah, Wisconsin 54956.

2. Pamphlets and posters. Director of Consumer Education, Box 6, Personal Products Company, Milltown, New Jersey 08850.

3. Pamphlets and charts. Tampax, Inc., 5 Dakota Drive, Lake Success, New York, New York 11040.

GROWTH AND DEVELOPMENT OF THE ADOLESCENT
UNIT X

INFORMATION SHEET

I. Terms and definitions

A. Adolescence--Period of youth extending from the development of secondary sex characteristics to full body development and personal maturity

B. Ephebiatrics--Study of adolescence

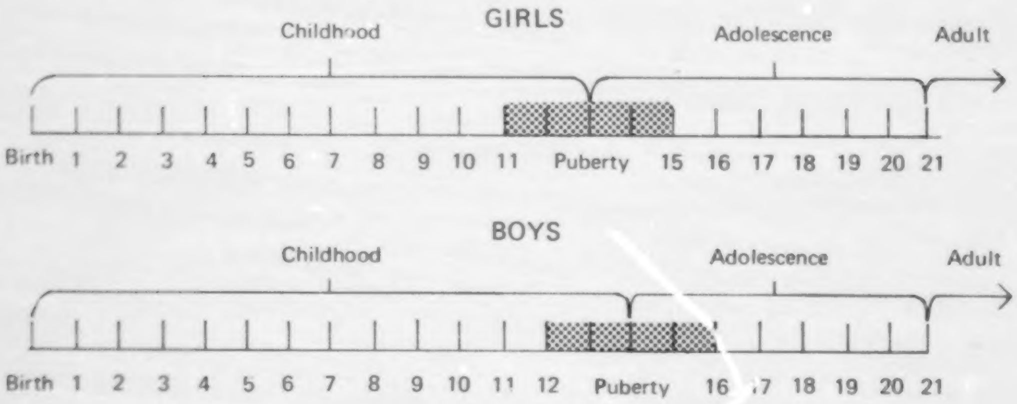
C. Ephebiatrist--Physician who specializes in the care of adolescents

D. Puberty--Period at which biological changes reach a climax

E. Pubescent period--Time from the onset of biological changes until puberty

F. Menarche--First menses

Overlap of Childhood, Puberty, and Adolescence


GIRLS
Childhood
Adolescence
Adult
Birth 1 2 3 4 5 6 7 8 9 10 11 Puberty 15 16 17 18 19 20 21
BOYS
Childhood
Adolescence
Adult
Birth 1 2 3 4 5 6 7 8 9 10 11 12 Puberty 16 17 18 19 20 21

II. General characteristics of adolescence

A. Great physical, emotional, and sexual changes begin

B. Physiological changes as well as parents' and society's expectations bring about uncertainty and stress for the adolescent

INFORMATION SHEET

C. Development during this period differs in timing and intensity between boys and girls as well as between individuals of the same sex

D. Puberty usually occurs about two years earlier in girls than in boys

E. During the growth period of adolescence, height increases about twenty-five percent and weight almost doubles

F. Because of the rapid changes taking place both in the adolescent and in peers, the young person has difficulty in forming a clear image of self

G. Although the adolescent wishes to be considered an adult by others, relief is often felt when parents exert their authority to help maintain control in difficult situations

H. Ossification of the bones begins about the fifth month of intrauterine life and is completed during adolescence with the closure of the epiphyseal line

I. Both boys and girls need to be told what bodily changes to expect and the purpose for these changes well before the time for them to occur

J. Rapid growth is energy-consuming; therefore, the adolescent is easily fatigued and may be moody and irritable

K. Rapid growth is accompanied by awkwardness; as growth slows, the awkwardness is gradually lessened

L. Sweat glands become more active; body odor, oily skin, and acne are common concerns

M. Young adolescents seek to establish a sense of identity; when the young person feels secure in identity, he/she is then able to establish warm, meaningful relationships with others

III. Hormone changes in puberty and adolescence

A. Shortly before puberty, the pituitary gland gradually increases production of two hormones

1. Growth hormone which is responsible for the growth in body size

2. Gonadotropic hormone which stimulates the gonads to greater activity

INFORMATION SHEET

B. Adolescence begins when the sex organs become functional

1. In girls, sexual maturity begins with menarche at about the age of twelve years

2. In boys, sexual maturity is indicated by the first nocturnal emission at about the age of fourteen years

C. Puberty may be as early as ten years or as late as fifteen years of age

D. Shortly after sexual maturity, the hormone from the gonads stops the activity of the growth hormone and physical growth ceases

E. Proper balance between the pituitary gland and the gonads leads to normal physical development

F. Growth rate increases suddenly about two years before sexual maturing

IV. Characteristics of adolescent girls

A. Maturation process takes about five years and may begin at age eight or nine

B. The growth spurt is the first evidence of maturation

C. Next changes are an increase in the width of the pelvis and the beginning of breast development

D. This is followed by the appearance of pubic hair and a little later by axillary hair

E. Fat is deposited in the hips and thighs, giving the girl a more rounded look

F. Menarche usually occurs by the age of twelve; it may occur as early as eight or as late as fifteen

(NOTE: If it has not occurred by the age of fifteen, a physician should be consulted.)

G. Production of ova begins about one year after menarche; uterine maturity occurs a short time later

H. The female adolescent reaches her maximum rate of growth about three years after the onset of puberty and has completed growth by the age of fourteen or fifteen

INFORMATION SHEET

V. Characteristics of adolescent boys

  A. Maturation process takes about seven years

  B. Earliest secondary sex change, usually at age twelve, is the increase in size of the external genitalia, followed by the appearance of pubic hair, then axillary and facial hair

  C. Rapid growth in muscular strength and coordination appears usually after the thirteenth year

  D. Larynx grows and voice deepens gradually, beginning in the early pubescent stage and becoming more noticeable about age fifteen

  E. Erections and nocturnal emissions begin about age fourteen

  F. Production of sperm occurs about the age of fifteen

  G. Rate of growth may be rapid and uneven, with the arms and legs growing out of proportion to the rest of the body

  H. Since boys' growth spurt occurs later than that of girls, they may suffer keenly over their delayed development and may be left out of sports and other activities because of their small size

  I. During this difficult stage, boys need to be reassured that they still have an opportunity to grow taller

  J. Boys usually complete their growth by the age of twenty or twenty-one

VI. Common effects of puberty on behavior

  A. The pronounced physical changes of puberty cause changes in behavior and attitudes; the adolescent feels uncertain, insecure, and confused

  B. Outward expressions of tension are restlessness, moodiness, withdrawal from family and friends, irritability, rebellion against authority, assertion of independence, critical attacks on others, disinclination to work at home or at school, and a generalized state of unhappiness

  C. The child who deviates even slightly from his/her age-mates in time or rate of maturing worries about normalcy

  D. Adolescents have a definite concept of what is appropriate or attractive; when they do not match their ideals, they become critical of themselves and dissatisfied with their appearance

  E. The adolescent's general health is reflected in appearance and greatly affects behavior

INFORMATION SHEET

- F. As the tempo of growth slows down and body changes are completed, both attitudes and behavior improve
- G. Physical defects may lead the child to feelings of inadequacy and the development of unhealthy personality patterns
- H. Accidents or physical injury may leave both physical and psychological scars; the attitudes of parents and peers will greatly affect the adolescent's adjustment to illness or injury

VII. Mental and social development of the adolescent

- A. Need for independence
    1. The adolescent needs opportunity and practice to become independent; rebellion against parents and other authoritarian figures are the adolescent's way of asserting independence
    2. Parents should accept the child's peers rather than antagonizing the child; often the adolescent adopts less than desirable practices in trying to determine self-concept
- B. Need to establish self-concept
    1. Children usually pattern their ideals after parents or other adults who have impressed them
    2. It is important for the adolescent to have an adequate concept of the male and female roles
    3. Self-concept and personality change frequently
- C. Need for recognition
    1. The adolescent needs to feel important as part of the family group
    2. Confidence in ability to achieve can come through family activities and responsibilities to the family
- D. Need for responsibility
    1. As the child matures, he/she needs to be helped to accept responsibility for own actions
    2. Adolescents should be expected to be responsible for certain tasks and duties and should learn responsibility for money in gradually increasing amounts

INFORMATION SHEET

E. Worries and fears

1. Most adolescents are concerned about schoolwork, relationships with peers, future role in life, and ability to cope with the many problems they encounter

2. The child who is worried or fearful may manifest this concern by erratic or unpredictable behavior

F. Daydreams

1. The adolescent spends much time dreaming of an acceptable present or future

2. Such daydreaming can be helpful when it aids the teenager in coping with the various situations

G. Dating

1. Adolescents need companionship with both their own sex and the opposite sex to learn to get along with others

2. Mixed social groups probably foster better development of social awareness than the current practice of young people pairing off to "go steady" at very young ages

H. Choosing a career

1. Parents can help their children by observing and encouraging their interests

2. When possible, various types of work activities can be explored through contact with different types of workers and by visiting various industries

3. School guidance counselors and books about various professions and work roles may be of assistance

I. Problems of parents

1. Parents need to be patient and understanding and yet maintain a certain amount of authority

2. As the adolescent matures, he/she enters into a new relationship with the parents; this new relationship is difficult for the parents to understand, prepare for, and accept

INFORMATION SHEEET

VIII. Care and guidance of the adolescent

A. Grooming

1. The adolescent learns to be self-sufficient and to care for personal needs

2. Grooming and dress will be influenced by the customs of peers and society

3. Importance of cleanliness and medical treatment should be stressed

B. Nutrition

1. Teenagers need three well-balanced meals a day

2. Boys usually eat larger amounts of food; girls may be very weight-conscious; both need guidance in food selection

3. Expectant teenage mother needs adequate nutrition to meet the needs of her own growth as well as that of her unborn infant

4. Adolescents require foods to aid in development of bones and muscles

    a. Sufficient proteins, 50 to 55 gm per day

    b. Minerals, particularly calcium

    c. Vitamins C and D

    d. Caloric intake of 2200 to 2800 calories per day for a moderately active girl; 3000 to 4000 calories for an athletic boy

5. Parents and/or nursing personnel can stress the importance of breakfast as well as the other two meals

C. Sleep

1. When possible the teenager should have own room and a bed with a firm mattress

2. Eight or nine hours of sleep are generally indicated

D. Safety

1. The chief hazard to the adolescent is the automobile; teenagers who wish to drive should be encouraged to participate in a drivers' training course

2. Adolescents should also receive instructions in water safety and gun safety

INFORMATION SHEET

IX. Other health factors

A. Adolescent clinics

1. Many cities now have clinics which specialize in treatment for the teenager

2. Many health care facilities, such as hospitals, also have special areas for the treatment of teenage illnesses and injuries

3. In many areas, physicians are specializing in care of adolescents

B. Health education

1. Periodic medical and dental examinations should be encouraged

2. Adverse effects of smoking should be emphasized

3. Venereal disease is on the increase and teenagers should know

    a. How the disease is contracted

    b. How it can be avoided

    c. What treatment is necessary

    d. What facilities are available for treatment

4. The consequences of use and/or addiction to alcohol and drugs should be discussed with the teenager

GROWTH AND DEVELOPMENT OF THE ADOLESCENT
UNIT X

TEST

1. Match the terms on the right to the correct definition.

______a. First menses

______b. Time from the onset of biological changes until puberty

______c. Period at which biological changes reach a climax

______d. Period of youth extending from the development of secondary sex characteristics to full body development and personal maturity

______e. Study of adolescence

______f. Physician who specializes in the care of adolescents

1. Puberty
2. Ephebiatrist
3. Pubescent period
4. Ephebiatrics
5. Menarche
6. Adolescence

2. Discuss general characteristics of adolescence.

3. Describe hormone changes in puberty and adolescence.

4. Discuss characteristics of adolescent girls.

5. Discuss characteristics of adolescent boys.

6. Describe some common effects of puberty on behavior.

7. Discuss the mental and social development of the adolescent.

   a. Need for independence

   b. Need to establish self-concept

   c. Need for recognition

   d. Need for responsibility

e. Worries and fears

f. Daydreams

g. Dating

h. Choosing a career

i. Problems of parents

8. Discuss the care and guidance of the adolescent.

   a. Grooming

   b. Nutrition

c. Sleep

d. Safety

9. Discuss other health factors pertaining to the adolescent.

   a. Adolescent clinics

   b. Health education

GROWTH AND DEVELOPMENT OF THE ADOLESCENT
UNIT X

ANSWERS TO TEST

1.

a.	5	d.	6
b.	3	e.	4
c.	1	f.	2

2. Discussion should include:

   a. Great physical, emotional, and sexual changes begin

   b. Physiological changes as well as parents' and society's expectations bring about uncertainty and stress for the adolescent

   c. Development during this period differs in timing and intensity between boys and girls as well as between individuals of the same sex

   d. Puberty usually occurs about two years earlier in girls than in boys

   e. During the growth period of adolescence, height increases about twenty-five percent and weight almost doubles

   f. Because of the rapid changes taking place both in the adolescent and in peers, the young person has difficulty in forming a clear image of self

   g. Although the adolescent wishes to be considered an adult by others, relief is often felt when parents exert their authority to help maintain control in difficult situations

   h. Ossification of the bones begins about the fifth month of intrauterine life and is completed during adolescence with the closure of the epiphyseal line

   i. Both boys and girls need to be told what bodily changes to expect and the purpose for these changes well before the time for them to occur

   j. Rapid growth is energy-consuming; therefore, the adolescent is easily fatigued and may be moody and irritable

   k. Rapid growth is accompanied by awkwardness; as growth slows, the awkwardness is gradually lessened

   l. Sweat glands become more active; body odor, oily skin, and acne are common concerns

m. Young adolescents seek to establish a sense of identity; when the young person feels secure in identity, he/she is then able to establish warm, meaningful relationships with others

3. Description should include:

   a. Shortly before puberty, the pituitary gland gradually increases production of two hormones

      1) Growth hormone which is responsible for the growth in body size

      2) Gonadotropic hormone which stimulates the gonads to greater activity

   b. Adolescence begins when the sex organs become functional

      1) In girls, sexual maturity begins with menarche at about the age of twelve years

      2) In boys, sexual maturity is indicated by the first nocturnal emission at about the age of fourteen years

   c. Puberty may be as early as ten years or as late as fifteen years of age

   d. Shortly after sexual maturity, the hormone from the gonads stops the activity of the growth hormone and physical growth ceases

   e. Proper balance between the pituitary gland and the gonads leads to normal physical development

   f. Growth rate increases suddenly about two years before sexual maturing

4. Discussion should include:

   a. Maturation process takes about five years and may begin at age eight or nine

   b. The growth spurt is the first evidence of maturation

   c. Next changes are an increase in the width of the pelvis and the beginning of breast development

   d. This is followed by the appearance of pubic hair and a little later by axillary hair

   e. Fat is deposited in the hips and thighs, giving the girl a more rounded look

   f. Menarche usually occurs by the age of twelve; it may occur as early as eight or as late as fifteen

   g. Production of ova begins about one year after menarche; uterine maturity occurs a short time later
   h. The female adolescent reaches her maximum rate of growth about three years after the onset of puberty and has completed growth by the age of fourteen or fifteen

5. Discussion should include:
   a. Maturation process takes about seven years
   b. Earliest secondary sex change, usually at age twelve, is the increase in size of the external genitalia, followed by the appearance of pubic hair, then axillary and facial hair
   c. Rapid growth in muscular strength and coordination appears usually after the thirteenth year
   d. Larynx grows and voice deepens gradually, beginning in the early pubescent stage and becoming more noticeable about age fifteen
   e. Erections and nocturnal emissions begin about age fourteen
   f. Production of sperm occurs about the age of fifteen
   g. Rate of growth may be rapid and uneven, with the arms and legs growing out of proportion to the rest of the body
   h. Since boys' growth spurt occurs later than that of girls, they may suffer keenly over their delayed development and may be left out of sports and other activities because of their small size
   i. During this difficult stage, boys need to be reassured that they still have an opportunity to grow taller
   j. Boys usually complete their growth by the age of twenty or twenty-one

6. Description should include:
   a. The pronounced physical changes of puberty cause changes in behavior and attitudes; the adolescent feels uncertain, insecure, and confused
   b. Outward expressions of tension are restlessness, moodiness, withdrawal from family and friends, irritability, rebellion against authority, assertion of independence, critical attacks on others, disinclination to work at home or at school, and a generalized state of unhappiness
   c. The child who deviates even slightly from his/her age-mates in time or rate of maturing worries about normalcy
   d. Adolescents have a definite concept of what is appropriate or attractive; when they do not match their ideals, they become critical of themselves and dissatisfied with their appearance

e. The adolescent's general health is reflected in appearance and greatly affects behavior

f. As the tempo of growth slows down and body changes are completed, both attitudes and behavior improve

g. Physical defects may lead the child to feelings of inadequacy and the development of unhealthy personality patterns

h. Accidents or physical injury may leave both physical and psychological scars; the attitudes of parents and peers will greatly affect the adolescent's adjustment to illness or injury

7. Discussion should include:

a. Need for independence

1) The adolescent needs opportunity and practice to become independent; rebellion against parents and other authoritarian figures are the adolescent's way of asserting independence

2) Parents should accept the child's peers rather than antagonizing the child; often the adolescent adopts less than desirable practices in trying to determine self-concept

b. Need to establish self-concept

1) Children usually pattern their ideals after parents or other adults who have impressed them

2) It is important for the adolescent to have an adequate concept of the male and female roles

3) Self-concept and personality change frequently

c. Need for recognition

1) The adolescent needs to feel important as part of the family group

2) Confidence in ability to achieve can come through family activities and responsibilities to the family

d. Need for responsibility

1) As the child matures, he/she needs to be helped to accept responsibility for own actions

2) Adolescents should be expected to be responsible for certain tasks and duties and should learn responsibility for money in gradually increasing amounts

e. Worries and fears

   1) Most adolescents are concerned about schoolwork, relationships with peers, future role in life, and ability to cope with the many problems they encounter

   2) The child who is worried or fearful may manifest this concern by erratic or unpredictable behavior

f. Daydreams

   1) The adolescent spends much time dreaming of an acceptable present or future

   2) Such daydreaming can be helpful when it aids the teenager in coping with the various situations

g. Dating

   1) Adolescents need companionship with both their own sex and the opposite sex to learn to get along with others

   2) Mixed social groups probably foster better development of social awareness than the current practice of young people pairing off to "go steady" at very young ages

h. Choosing a career

   1) Parents can help their children by observing and encouraging their interests

   2) When possible, various types of work activities can be explored through contact with different types of workers and by visiting various industries

   3) School guidance counselors and books about various professions and work roles may be of assistance

i. Problems of parents

   1) Parents need to be patient and understanding and yet maintain a certain amount of authority

   2) As the adolescent matures, he/she enters into a new relationship with the parents; this new relationship is difficult for the parents to understand, prepare for, and accept

8. Discussion should include:

a. Grooming

   1) The adolescent learns to be self-sufficient and to care for personal needs

2) Grooming and dress will be influenced by the customs of peers and society

3) Importance of cleanliness and medical treatment should be stressed

b. Nutrition

1) Teenagers need three well-balanced meals a day

2) Boys usually eat larger amounts of food; girls may be very weight-conscious; both need guidance in food selection

3) Expectant teenage mother needs adequate nutrition to meet the needs of her own growth as well as that of her unborn infant

4) Adolescents require foods to aid in development of bones and muscles

a) Sufficient proteins, 50 to 55 gm per day

b) Minerals, particularly calcium

c) Vitamins C and D

d) Caloric intake of 2200 to 2800 calories per day for a moderately active girl; 3000 to 4000 calories for an athletic boy

5) Parents and/or nursing personnel can stress the importance of breakfast as well as the other two meals

c. Sleep

1) When possible the teenager should have own room and a bed with a firm mattress

2) Eight or nine hours of sleep are generally indicated

d. Safety

1) The chief hazard to the adolescent is the automobile; teenagers who wish to drive should be encouraged to participate in a drivers' training course

2) Adolescents should also receive instructions in water safety and gun safety

9. Discussion should include:

a. Adolescent clinics

1) Many cities now have clinics which specialize in treatment for the teenager

2) Many health care facilities, such as hospitals, also have special areas for the treatment of teenage illnesses and injuries

3) In many areas, physicians are specializing in care of adolescents

b. Health education

1) Periodic medical and dental examinations should be encouraged

2) Adverse effects of smoking should be emphasized

3) Venereal disease is on the increase and teenagers should know

a) How the disease is contracted

b) How it can be avoided

c) What treatment is necessary

d) What facilities are available for treatment

4) The consequences of use and/or addiction to alcohol and drugs should be discussed with the teenager

CARING FOR THE HOSPITALIZED ADOLESCENT
UNIT XI

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to discuss conditions which affect the adolescent. The student should also be able to discuss concerns, reactions to hospitalization, and nursing interventions. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with illnesses of adolescence to the correct definitions.
2. Discuss acne vulgaris, including predisposing causes, description, and treatment.
3. Discuss cause, contributing factors, and treatment of obesity.
4. Describe symptoms, contributing factors, and treatment and nursing responsibilities of dysmenorrhea.
5. Discuss tuberculosis giving infectious agent, mode of transmission, symptoms, complications, prevention, drugs used for treatment, and nursing responsibilities.
6. Discuss drug misuse in the adolescent.
7. Discuss concerns, reactions to hospitalization, and nursing interventions for the hospitalized adolescent.
8. Discuss the relationship of nursing personnel to the dying child.
9. Describe the child's concept of death at various ages.
10. Discuss nursing responsibilities to the dying child of various ages.

CARING FOR THE HOSPITALIZED ADOLESCENT
UNIT XI

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information sheet.

  C. Discuss terminal and specific objectives.

  D. Discuss information sheet.

  E. Secure resource person from the state or local health department to discuss drug misuse and/or venereal disease.

  F. Give test.

II. Student:

  A. Read objectives.

  B. Study information sheet.

  C. Participate in discussion.

  D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Information sheet

  C. Test

  D. Answers to test

II. References:

  A. Broadribb, Violet, and Charlotte Corliss. *Maternal-Child Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

  B. Brunner, Lillian et al. *The Lippincott Manual of Nursing Practice.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1974.

C. Hurlock, Elizabeth B. *Child Development.* New York: McGraw-Hill Book Company, 1972.

D. Thompson, Eleanor D. *Pediatrics for Practical Nurses.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1970.

E. Thompson, Ella M., and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

III. Other materials:

A. Films

1. "Meeting." National Audiovisual Center, Washington, D.C. 20409.
2. "Lucy." Pictura Films Distributing Corporation, 43 West Sixteenth, New York, New York 10011.
3. "Anything for Kicks." Drug Abuse Films, National Audiovisual Center, General Services Administration, Washington, D.C. 20409.
4. "LSD: Trip or Trap." Sid Davis Productions, 1046 South Robertson Boulevard, Los Angeles, California 90035.

(NOTE: These films are also available to Oklahoma instructors from the Oklahoma State Department of Health.)

B. Publication--*To Parents/About Drugs.* Metropolitan Life Insurance Company, Madison Avenue, New York, New York 10010.

CARING FOR THE HOSPITALIZED ADOLESCENT
UNIT XI

INFORMATION SHEET

I. Terms and definitions

   A. Sebaceous gland--Oil-secreting gland of the skin

   B. Pore--Opening of the duct of a sweat or sebaceous gland

   C. Comedo--Blackhead; discolored dried sebum plugging the pore of an excretory duct of the skin

   (NOTE: Plural form is comedones.)

   D. Papule--Red elevated area on the skin, solid and circumscribed, varying in size from less than 0.1 cm to 1 cm; a pimple

   E. Pustule--Small elevation of the skin filled with lymph and pus

   F. Nodule--Circumscribed skin lesion of solid elevation varying in size but larger than a papule

   G. Cyst--Enclosed place within a tissue or organ which is lined by epithelium and filled with a fluid or other material

   H. Acne--Chronic inflammatory disease of the sebaceous glands and hair follicles characterized by comedones which often become inflamed and form papules, pustules, nodules, and cysts

   I. Sebum--Fatty secretion of the sebaceous glands of the skin

   J. Acne vulgaris--Common or average type of acne occurring in adolescence and early adulthood

   K. Obesity--Increase of body weight significantly above the normal range for the particular age, sex, and height

   L. Dysmenorrhea--Difficult or painful menstruation

(NOTE: Most of the conditions discussed in this unit are usually not serious enough to require hospitalization. However, these conditions may be encountered in the hospitalization and treatment of adolescents for other reasons.)

II. Acne vulgaris

   A. Predisposing causes

      1. Hormonal changes of adolescence

      2. Genetic predisposition

      3. Emotional stress

INFORMATION SHEET

B. Description

1. With the onset of puberty the sebaceous glands begin to secrete more sebum

2. Dust or dirt enter the pores, forming comedones which cause further enlargement

3. Germs enter the enlarged pores and a small infection takes place forming a papule

4. The papules may enlarge to form pustules

5. Acne is usually seen on the face, but may develop on the back and shoulders

C. Treatment

1. Prevent obstruction of the oil and sweat glands

   a. Wash affected areas three times per day with soap and water or a medicated cleanser

   b. Shampoo at least twice weekly with a medicated shampoo

   c. Use bath brush if back is involved

2. Reduce inflammation and combat secondary infection

   a. Use topical remedies to remove grease and cleanse the skin surface

      Examples: Acne-Dome Medicated Cleanser and Fostex

   b. Seek medical assistance; administer broad spectrum antibiotics as prescribed

      (NOTE: Tetracycline administered daily may diminish occurrence and infection of acne.)

   c. Suggest vigorous exercise in fresh air and sunshine

3. Eliminate factors which predispose to acne

   a. Limit or avoid fatty foods such as pork, chocolate, peanuts

   b. Limit intake of high carbohydrate foods such as pastries, candy, and carbonated beverages

4. Provide emotional support

   a. Avoid undue emphasis on condition

   b. Assist the adolescent to assume responsibility

   c. Provide and encourage satisfying outlets for energy

INFORMATION SHEET

III. Obesity

   A. Cause--Eating more food than is needed for growth and energy

   B. Contributing factors

      1. Familial tendency

      2. Improper diet either in types of food or amounts

      3. Emotional stress

      4. Lack of physical activity

      5. Glandular disease, very rarely

   C. Treatment

      1. Instruct in proper diet

      2. Regulate food intake by substituting fruits for rich desserts

      3. Assist the adolescent to avoid temptation of eating fattening foods by not purchasing or providing them

      4. Provide emotional support

         a. Recognize the adolescent's achievements

         b. Substitute physical activity for sedentary activity

         c. Seek help from a physician

         d. Assist the adolescent to be responsible for proper diet

         e. Encourage the adolescent to assist in planning and preparing low calorie foods

IV. Dysmenorrhea

   A. Symptoms

      1. Cramping abdominal pain

      2. Leg pain

      3. Backache

INFORMATION SHEET

B. Contributing factors

1. Emotional tension
2. Anxiety
3. Adolescent preoccupation with bodily complaints
4. Pelvic abnormality, rarely

C. Treatment and nursing responsibilities

1. Instruct patient in good personal care including cleanliness, fresh air, moderate exercise, and proper diet and to avoid chilling during menstruation
2. Apply local heat to lower abdomen
3. Administer sedative or analgesic, if prescribed
4. Provide emotional support by permitting the teenager to express her fears, feelings, and frustrations concerning menstruation and other problems

V. Tuberculosis

A. Infectious agent--Tubercle bacillus

(NOTE: The bovine type of tuberculosis communicated to man through infected dairy products is seldom seen in the United States since nearly all milk is pasteurized before use.)

B. Mode of transmission

1. Through the air in the residues of droplets projected when an infected person sneezes, laughs, coughs, or talks
2. From fomites, articles handled or contaminated by an infected person
3. By ingestion of contaminated food

C. Symptoms

1. In the early stage of the disease--No symptoms
2. As the disease progresses
    a. Fatigue
    b. Weight loss
    c. Anorexia

INFORMATION SHEET

   d. Night sweating

   e. Afternoon temperature elevation

   f. Productive cough

   g. Blood-tinged sputum

D. Complications

   1. Spread of the infection to the digestive tract through the swallowing of infected sputum

   2. Localized tuberculous infections in the brain, liver, spleen, or kidneys if the germs filter into the bloodstream

   3. Secondary infections

E. Prevention

   1. Health education to prevent contact with susceptible persons

   2. Administration of vaccine where the incidence is high

   3. Diagnostic tests to detect early infection

   4. Further examination when skin tests are positive

   5. Chemotherapy to control the infection

   6. Periodic examinations to detect any recurrence

F. Drugs used for treatment

   1. Streptomycin, an antibiotic given by intramuscular injection

   2. Isoniazid or INH, a synthetic preparation given orally or by intramuscular injection

   3. Para-aminosalicylic acid or PAS, a synthetic preparation given orally

      (NOTE: PAS is not very effective when given alone. When given with streptomycin or isoniazid, it inhibits the formation of resistant tubercle bacilli and increases the effectiveness of the drug with which it is combined. The tubercle bacilli can become highly resistant to medication, particularly if the therapy is interrupted.)

INFORMATION SHEET

G. Nursing responsibilities

1. Isolate the patient in the hospital setting
2. Keep children, adolescents, and debilitated people from contact with the infected person
3. Encourage the patient to take the medication as prescribed for the length of time indicated
4. Provide for a nutritional diet with emphasis on protein, calcium, and vitamins
5. Provide for physical and emotional rest
6. Increase activity as the patient's condition improves
7. Provide diversions suitable to the age of the patient
8. Instruct the parents to have others tested who were in contact with the patient
9. Encourage periodic checkups after the child has been cured
10. Encourage periodic examinations with x-rays and blood tests for exposed persons

VI. Drug misuse in adolescents

A. Many adolescents and children experiment with drugs

(NOTE: Some basic reasons for use are poor self-concept, social pressure from peers, escape from problems, boredom, experimentation, and curiosity.)

B. The adolescent who is well-adjusted may go no further than casual experimentation; poorly-adjusted youth may turn to drugs as a solution for problems

C. Prevention of overuse of drugs is as important as treatment for excessive dosage; in the hospital setting nursing personnel can reinforce careful use of medications by limiting their own use of drugs and by administering medications only as prescribed

D. Encouraging use of abilities in constructive activities gives pride and self-respect

E. Education concerning drug misuse should be given in a factual manner; effects and dangers of continued use should be described without using scare tactics

INFORMATION SHEET

VII. Hospitalized adolescent

A. Concerns

1. Illness or injury is a threat to the ego

2. The ideal place for the adolescent is in a room or unit with others of the same age group

3. The struggle for independence will be threatened by the illness or injury and dependence upon others for care may cause undesirable behavior

4. The illness or injury may be seen as punishment

5. Because of the absorption with body image and its changes, illness may have an increased interest

6. Some adolescents appear to have a large fund of misinformation; it is important for them to receive accurate information

7. Opportunity should be given them to express their fears and concerns, knowing that they will receive empathy and understanding and will not be ridiculed

8. Some adolescents may feel more comfortable when an older, motherly-type person cares for them; others may relate better to a younger nurse

B. Reactions to hospitalization

1. Denial

2. Withdrawal

3. Anger and hostility

4. Aggressiveness

5. Impatience

C. Nursing interventions

1. Formulate a set of rules regulating the activities of patients; provide them in printed form to each new admission

2. Allow the adolescent to be responsible for personal needs as much as possible; encourage independence

3. Provide privacy; avoid unnecessary exposure of the body

INFORMATION SHEET

4. Place patients of one sex in a room

   (NOTE: It is usually disturbing to any child over the age of four or five to share a room with a person of the opposite sex.)

5. Permit socialization and continuation of peer relationships with outside friends; regulate visits to avoid tiring the patient

6. Provide opportunity to ask questions or to talk about fears and concerns

7. Serve meals which reflect adolescent food preferences

8. Allow freedom in choice of clothing

9. Encourage continuation of education

10. Provide information concerning the illness and related problems in a factual manner, even when it is not specifically requested

    (NOTE: Some may feel reluctant to ask, fearing that they should already know all the answers.)

11. Provide for occupational therapy or constructive activities

12. Permit the patient to assist with planning of care

VIII. Nursing personnel and the dying child

A. Most nursing personnel find it extremely difficult to face the death of a child or adolescent; it is important for them to reconcile their own feelings in order to be supportive to the patient and family

B. Literature pertaining to the subject provides a resource to use in developing one's philosophy and attitude toward death in children and young people and in planning appropriate physical and psychological support for the patient and parents

C. Most nursing personnel feel a sense of frustration and helplessness when caring for the terminally ill young person

D. The primary purpose of nursing care is to enhance the quality of living as much as possible

E. An important goal of nursing care is to assist the young person and the family to cope with grief

F. Planning for nursing care and emotional support will be aided by knowing about the expected reaction of children at various ages to the concept of death

G. Spiritual needs of the patient and the family should be provided for and respected

INFORMATION SHEET

IX. Child's concept of death

- A. Birth to three years
  1. Has little concept of death since the concept of time is not developed
  2. Fears separation from parents and familiar surroundings
- B. Three to five years
  1. Has no real understanding of death but is curious about it
  2. Denies permanence of death; believes death is a kind of change
  3. Fears separation from family and familiar surroundings more than death
  4. May believe that illness and/or hospitalization is a punishment
  5. May become fearful of being left alone; needs reassurance that someone is always nearby
  6. Functions on a day to day reality with little concept of a future
- C. Five to nine years
  1. Recognizes death but cannot conceive that it occurs naturally or by chance
  2. Believes death is just part of a game, that a person dies and then is alive again to play another game
  3. Considers death as a deprivation and personal abandonment when it occurs in someone they know
  4. May become apprehensive, distressed, or withdrawn when unable to change a stressful situation
- D. Nine to twelve years
  1. Sees death as a cessation of life; understands that he/she is *alive* but can become *not alive*
  2. Comprehends the difference between death and sleep; achieves a more realistic concept of death as a permanent biological process
  3. Learns the meaning of death through own personal experience such as the death of a family member, national figure, or pet
  4. May have a distorted concept of death from contact with television and other media where an actor dies in one program and reappears in another

INFORMATION SHEET

E. Adolescent

1. Comprehends the permanence of death in much the same way that an adult does

2. Desires to live and sees death as an end to desired goals such as independence, achievement, and physical improvement

3. May be depressed and resentful because of changes in body image, dependency, and social environment

4. May feel isolated and rejected because of the separation from family and peers; adolescents may withdraw when faced with extended illness and impending death of a friend or relative

5. May feel deprived or angry about the possibility of death because of desire to live

6. May deny possibility of death in foreseeable future

X. Nursing responsibilities

A. Birth to three years

1. Permit the parents to remain with the child

2. Encourage the parents to touch or hold the child

(NOTE: Touching is a basic comforting technique and frequently affords more solace than words.)

B. Three to five years

1. Reassure the child that parents will stay as much as possible and will return at stated time when they do leave

2. When death is anticipated and the child asks "Am I going to die?" a possible answer is "We will all die someday but you are not going to die today"

3. When death is imminent and the child asks "Am I going to die?" a possible answer is "Yes, but we will be here to care for you and stay with you"

4. Answer questions truthfully and simply, based upon the level of understanding of the particular age

C. Five to nine years

1. Questions concerning the disease, treatment, and possibility of death should be answered truthfully; the child looks to parents and those he/she trusts for emotional support and comfort when death is inevitable

INFORMATION SHEET

2. No specific time in terms of days or months should be given since each individual and each illness is different

D. Nine to twelve years

1. Death is understood as a final separation and the child knows what he/she will be missing; opportunity to mourn the impending loss should be provided

2. Sadness, bitterness, or aggressive behavior may be demonstrated; the child must be permitted to express feelings and concerns

E. Adolescent

1. The adolescent should be allowed to maintain emotional defense; answers expected or desired are usually indicated by type of questions asked

Example: If the adolescent says "I am not going to die," an appropriate response would be "No, you are not going to die right now."

2. When the adolescent asks "How long do I have to live? it may be an indication that he/she is becoming able to face reality and can tolerate direct answers; an appropriate answer should be one which still offers hope, such as "People with an illness like yours may die in six months, but some may live much longer"

3. Bitterness and resentment over the inevitable outcome may make the young person belligerent, uncooperative, or withdrawn; such behavior should be expected and handled appropriately

4. Much emotional support can be provided by permitting the adolescent and parents opportunity to express fears and feelings; in many instances listening in a caring manner provides more support than any physical care

CARING FOR THE HOSPITALIZED ADOLESCENT
UNIT XI

TEST

1. Match the terms on the left to the correct definitions.

_____a. Difficult or painful menstruation

_____b. Circumscribed skin lesion of solid elevation varying in size but larger than a papule

_____c. Chronic inflammatory disease of the sebaceous glands and hair follicles characterized by comedones which often become inflamed and form papules, pustules, nodules, and cysts

_____d. Increase of body weight significantly above the normal range for the particular age, sex, and height

_____e. Blackhead; discolored dried sebum plugging the pore of an excretory duct of the skin

_____f. Small elevation of the skin filled with lymph and pus

_____g. Fatty secretion of the sebaceous glands of the skin

_____h. Opening of the duct of a sweat or sebaceous gland

_____i. Enclosed place within a tissue or organ which is lined by epithelium and filled with a fluid or other material

_____j. Common or average type of acne occurring in adolescence and early adulthood

_____k. Oil secreting gland of the skin

_____l. Red elevated area on the skin, solid and circumscribed, varying in size from less than 0.1 cm to 1 cm; a pimple

1. Acne
2. Pustule
3. Cyst
4. Sebaceous gland
5. Sebum
6. Acne vulgaris
7. Obesity
8. Dysmenorrhea
9. Papule
10. Pore
11. Comedo
12. Nodule

2. Discuss acne vulgaris.
    a. Predisposing causes
    b. Description
    c. Treatment

3. Discuss cause, contributing factors, and treatment of obesity.
    a. Cause
    b. Contributing factors
    c. Treatment

4. Describe dysmenorrhea.
   a. Symptoms
   b. Contributing factors
   c. Treatment and nursing responsibilities

5. Discuss tuberculosis.
   a. Infectious agent
   b. Mode of transmission
   c. Symptoms
   d. Complications

e. Prevention

f. Drugs used for treatment

g. Nursing responsibilities

6. Discuss drug misuse in the adolescent.

7. Discuss the following factors concerning the hospitalized adolescent.

   a. Concerns

   b. Reactions to hospitalization

c. Nursing interventions

8. Discuss the relationship of nursing personnel to the dying child.

9. Describe the child's concept of death at various ages.
   - a. Birth to three years
   - b. Three to five years
   - c. Five to nine years
   - d. Nine to twelve years
   - e. Adolescent

10. Discuss nursing responsibilities to the dying child of various ages.
    - a. Birth to three years

b. Three to five years

c. Five to nine years

d. Nine to twelve years

e. Adolescent

CARING FOR THE HOSPITALIZED ADOLESCENT
UNIT XI

ANSWERS TO TEST

1.
   a. 8
   b. 12
   c. 1
   d. 7
   e. 11
   f. 2
   g. 5
   h. 10
   i. 3
   j. 6
   k. 4
   l. 9

2. Description should include:
   a. Predisposing causes
      1) Hormonal changes of adolescence
      2) Genetic predisposition
      3) Emotional stress
   b. Description
      1) With the onset of puberty the sebaceous glands begin to secrete more sebum
      2) Dust or dirt enter the pores, forming comedones which cause further enlargement
      3) Germs enter the enlarged pores and a small infection takes place forming a papule
      4) The papules may enlarge to form pustules
      5) Acne is usually seen on the face, but may develop on the back and shoulders
   c. Treatment
      1) Prevent obstruction of the oil and sweat glands
         a) Wash affected areas three times per day with soap and water or a medicated cleanser
         b) Shampoo at least twice weekly with a medicated shampoo
         c) Use bath brush if back is involved

2) Reduce inflammation and combat secondary infection

  a) Use topical remedies to remove grease and cleanse the skin surface

  b) Seek medical assistance; administer broad spectrum antibiotics as prescribed

  c) Suggest vigorous exercise in fresh air and sunshine

3) Eliminate factors which predispose to acne

  a) Limit or avoid fatty foods such as pork, chocolate, peanuts

  b) Limit intake of high carbohydrate foods such as pastries, candy, and carbonated beverages

4) Provide emotional support

  a) Avoid undue emphasis on condition

  b) Assist the adolescent to assume responsibility

  c) Provide and encourage satisfying outlets for energy

3. Discussion should include:

  a. Cause–Eating more food than is needed for growth and energy

  b. Contributing factors

    1) Familial tendency

    2) Improper diet either in types of food or amounts

    3) Emotional stress

    4) Lack of physical activity

    5) Glandular disease, very rarely

  c. Treatment

    1) Instruct in proper diet

    2) Regulate food intake by substituting fruits for rich desserts

    3) Assist the adolescent to avoid temptation of eating fattening foods by not purchasing or providing them

- 4) Provide emotional support
  - a) Recognize the adolescent's achievements
  - b) Substitute physical activity for sedentary activity
  - c) Seek help from a physician
  - d) Assist the adolescent to be responsible for proper diet
  - e) Encourage the adolescent to assist in planning and preparing low calorie foods

4. Description should include:
   - a. Symptoms
     - 1) Cramping abdominal pain
     - 2) Leg pain
     - 3) Backache
   - b. Contributing factors
     - 1) Emotional tension
     - 2) Anxiety
     - 3) Adolescent preoccupation with bodily complaints
     - 4) Pelvic abnormality, rarely
   - c. Treatment and nursing responsibilities
     - 1) Instruct patient in good personal care including cleanliness, fresh air, moderate exercise, and proper diet and to avoid chilling during menstruation
     - 2) Apply local heat to lower abdomen
     - 3) Administer sedative or analgesic, if prescribed
     - 4) Provide emotional support by permitting the teenager to express her fears, feelings, and frustrations concerning menstruation and other problems

5. Discussion should include:
   - a. Infectious agent Tubercle bacillus

b. Mode of transmission

    1) Through the air in the residues of droplets projected when an infected person sneezes, laughs, coughs, or talks

    2) From fomites, articles handled or contaminated by an infected person

    3) By ingestion of contaminated food

c. Symptoms

    1) In the early stage of the disease--No symptoms

    2) As the disease progresses

        a) Fatigue

        b) Weight loss

        c) Anorexia

        d) Night sweating

        e) Afternoon temperature elevation

        f) Productive cough

        g) Blood-tinged sputum

d. Complications

    1) Spread of the infection to the digestive tract through the swallowing of infected sputum

    2) Localized tuberculous infections in the brain, liver, spleen, or kidneys if the germs filter into the bloodstream

    3) Secondary infections

e. Prevention

    1) Health education to prevent contact with susceptible persons

    2) Administration of vaccine where the incidence is high

    3) Diagnostic tests to detect early infection

    4) Further examination when skin tests are positive

    5) Chemotherapy to control the infection

    6) Periodic examinations to detect any recurrence

f. Drugs used for treatment

1) Streptomycin, an antibiotic given by intramuscular injection

2) Isoniazid or INH, a synthetic preparation given orally or by intramuscular injection

3) Para-aminosalicylic acid or PAS, a synthetic preparation given orally

g. Nursing responsibilities

1) Isolate the patient in the hospital setting

2) Keep children, adolescents, and debilitated people from contact with the infected person

3) Encourage the patient to take the medication as prescribed for the length of time indicated

4) Provide for a nutritional diet with emphasis on protein, calcium, and vitamins

5) Provide for physical and emotional rest

6) Increase activity as the patient's condition improves

7) Provide diversions suitable to the age of the patient

8) Instruct the parents to have others tested who were in contact with the patient

9) Encourage periodic checkups after the child has been cured

10) Encourage periodic examinations with x-rays and blood tests for exposed persons

6. Discussion should include:

a. Many adolescents and children experiment with drugs

b. The adolescent who is well-adjusted may go no further than casual experimentation; poorly-adjusted youth may turn to drugs as a solution for problems

c. Prevention of overuse of drugs is as important as treatment for excessive dosage; in the hospital setting nursing personnel can reinforce careful use of medications by limiting their own use of drugs and by administering medications only as prescribed

d. Encouraging use of abilities in constructive activities gives pride and self-respect

e. Education concerning drug misuse should be given in a factual manner; effects and dangers of continued use should be described without using scare tactics

7. Discussion should include:

   a. Concerns

      1) Illness or injury is a threat to the ego

      2) The ideal place for the adolescent is in a room or unit with others of the same age group

      3) The struggle for independence will be threatened by the illness or injury and dependence upon others for care may cause undesirable behavior

      4) The illness or injury may be seen as punishment

      5) Because of the absorption with body image and its changes, illness may have an increased interest

      6) Some adolescents appear to have a large fund of misinformation; it is important for them to receive accurate information

      7) Opportunity should be given them to express their fears and concerns, knowing that they will receive empathy and understanding and will not be ridiculed

      8) Some adolescents may feel more comfortable when an older, motherly-type person cares for them; others may relate better to a younger nurse

   b. Reactions to hospitalization

      1) Denial

      2) Withdrawal

      3) Anger and hostility

      4) Aggressiveness

      5) Impatience

   c. Nursing interventions

      1) Formulate a set of rules regulating the activities of patients; provide them in printed form to each new admission

      2) Allow the adolescent to be responsible for personal needs as much as possible; encourage independence

      3) Provide privacy; avoid unnecessary exposure of the body

      4) Place patients of one sex in a room

5) Permit socialization and continuation of peer relationships with outside friends; regulate visits to avoid tiring the patient

6) Provide opportunity to ask questions or to talk about fears and concerns

7) Serve meals which reflect adolescent food preferences

8) Allow freedom in choice of clothing

9) Encourage continuation of education

10) Provide information concerning the illness and related problems in a factual manner, even when it is not specifically requested

11) Provide for occupational therapy or constructive activities

12) Permit the patient to assist with planning of care

8. Discussion should include:

a. Most nursing personnel find it extremely difficult to face the death of a child or adolescent; it is important for them to reconcile their own feelings in order to be supportive to the patient and family

b. Literature pertaining to the subject provides a resource to use in developing one's philosophy and attitude toward death in children and young people and in planning appropriate physical and psychological support for the patient and parents

c. Most nursing personnel feel a sense of frustration and helplessness when caring for the terminally ill young person

d. The primary purpose of nursing care is to enhance the quality of living as much as possible

e. An important goal of nursing care is to assist the young person and the family to cope with grief

f. Planning for nursing care and emotional support will be aided by knowing about the expected reaction of children at various ages to the concept of death

g. Spiritual needs of the patient and the family should be provided for and respected

9. Description should include:

a. Birth to three years

1) Has little concept of death since the concept of time is not developed

2) Fears separation from parents and familiar surroundings

b. Three to five years

1) Has no real understanding of death but is curious about it

2) Denies permanence of death; believes death is a kind of change

3) Fears separation from family and familiar surroundings more than death

4) May believe that illness and/or hospitalization is a punishment

5) May become fearful of being left alone; needs reassurance that someone is always nearby

6) Functions on a day to day reality with little concept of a future

c. Five to nine years

1) Recognizes death but cannot conceive that it occurs naturally or by chance

2) Believes death is just part of a game, that a person dies and then is alive again to play another game

3) Considers death as a deprivation and personal abandonment when it occurs in someone they know

4) May become apprehensive, distressed, or withdrawn when unable to change a stressful situation

d. Nine to twelve years

1) Sees death as a cessation of life; understands that he/she is *alive* but can become *not alive*

2) Comprehends the difference between death and sleep; achieves a more realistic concept of death as a permanent biological process

3) Learns the meaning of death through own personal experience such as the death of a family member, national figure, or pet

4) May have a distorted concept of death from contact with television and other media where an actor dies in one program and reappears in another

e. Adolescent

1) Comprehends the permanence of death in much the same way that an adult does

2) Desires to live and sees death as an end to desired goals such as independence, achievement, and physical improvement

   3) May be depressed and resentful because of changes in body image, dependency, and social environment

   4) May feel isolated and rejected because of the separation from family and peers; adolescents may withdraw when faced with extended illness and impending death of a friend or relative

   5) May feel deprived or angry about the possibility of death because of desire to live

   6) May deny possibility of death in foreseeable future

10. Discussion should include:

   a. Birth to three years

      1) Permit the parents to remain with the child

      2) Encourage the parents to touch or hold the child

   b. Three to five years

      1) Reassure the child that parents will stay as much as possible and will return at stated time when they do leave

      2) When death is anticipated and the child asks "Am I going to die?" a possible answer is "We will all die someday but you are not going to die today."

      3) When death is imminent and the child asks "Am I going to die?" a possible answer is "Yes, but we will be here to care for you and stay with you"

      4) Answer questions truthfully and simply, based upon the level of understanding of the particular age

   c. Five to nine years

      1) Questions concerning the disease, treatment, and possibility of death should be answered truthfully; the child looks to parents and those he/she trusts for emotional support and comfort when death is inevitable

      2) No specific time in terms of days or months should be given since each individual and each illness is different

   d. Nine to twelve years

      1) Death is understood as a final separation and the child knows what he/she will be missing; opportunity to mourn the impending loss should be provided

      2) Sadness, bitterness, or aggressive behavior may be demonstrated; the child must be permitted to express feelings and concerns

e. Adolescent

1) The adolescent should be allowed to maintain emotional defense; answers expected or desired are usually indicated by type of questions asked

2) When the adolescent asks "How long do I have to live?" it may be an indication that he/she is becoming able to face reality and can tolerate direct answers; an appropriate answer should be one which still offers hope, such as "People with an illness like yours may die in six months, but some may live much longer"

3) Bitterness and resentment over the inevitable outcome may make the young person belligerent, uncooperative, or withdrawn; such behavior should be expected and handled appropriately

4) Much emotional support can be provided by permitting the adolescent and parents opportunity to express fears and feelings; in many instances listening in a caring manner provides more support than any physical care

INTRODUCTION TO MEDICAL SURGICAL NURSING
UNIT I

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list causes of illness and describe the purposes of treatment. The student will be able to list signs and symptoms of illness and discuss the treatment of each sign or symptom. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with this unit to the correct definition.
2. List predisposing causes and specific causes of illness.
3. Describe the three purposes of treatment.
4. List signs and symptoms of illness.
5. List local and systemic symptoms of inflammation and infection.
6. List factors which influence cardinal signs.
7. List subjective and objective observations of pain.
8. List causes of hemorrhage.
9. List the three primary sources of hemorrhage and the characteristics of each.
10. List symptoms of hemorrhage.
11. Match types of shock to the correct descriptions.
12. List symptoms of shock.
13. List the three types of gastric distress and the symptoms of each.
14. List three types of intestinal distress and the symptoms of each.
15. List symptoms of cardio-respiratory distress.
16. List symptoms of urinary distress.
17. List symptoms and causes of neurological distress.

18. Discuss fluid balance and imbalance.
19. List symptoms of fluid imbalance.
20. Describe general nursing responsibilities for medical-surgical patients.
21. Describe nursing responsibilities for specific conditions.
22. Describe the symptoms, treatment, and care of a specific patient.

INTRODUCTION TO MEDICAL SURGICAL NURSING
UNIT I

SUGGESTED ACTIVITIES

I. Instructor:

- A. Provide students with objective sheet.
- B. Provide students with information and assignment sheets.
- C. Discuss terminal and specific objectives.
- D. Discuss information and assignment sheets.
- E. Assist with assignment sheet.
- F. Give test.

II. Student:

- A. Read objectives.
- B. Study information sheet.
- C. Participate in discussion.
- D. Complete assignment sheet.
- E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

- A. Objectives
- B. Information sheet
- C. Assignment Sheet #1--Describe the Symptoms, Treatment, and Care of a Specific Patient
- D. Test
- E. Answers to test

II. References:

A. Culver, Vivian M. *Modern Bedside Nursing.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

B. Johnston, Dorothy F. *Total Patient Care.* St. Louis, Missouri: The C. V. Mosby Company, 1972.

C. Kozier, Barbara B., and Beverly W. DuGas. *Fundamentals of Patient Care.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1967.

D. Thompson, Ella M., and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1972.

INTRODUCTION TO MEDICAL SURGICAL NURSING
UNIT I

INFORMATION SHEET

I. Terms and definitions

  A. Illness--State of being ill or sick; any deviation from the normal functioning of the body; sickness; disease; disorder

  B. Infection--Change in body tissues brought about by pathogenic organisms

  C. Congenital--Existing before or at birth

  D. Pathology--Study of disease processes in the body

  E. Etiology--Study of the causes of diseases or abnormal conditions; cause or origin of a disease

  F. Prognosis--Prediction as to the probable course and outcome of a disease, injury, or abnormality

  G. Diagnosis--Recognition of a disease state from varied symptoms, examinations, and tests

  H. Neoplasm--New tissue mass or growth

  I. Benign--Not malignant or recurrent

  J. Malignant--Pertaining to or denoting progressive growth of certain tumors which may spread to other sites if not checked by treatment

  K. Idiopathy--Primary disease which is not a result of any other disease or one for which no cause is known

  L. Supportive therapy--Any form of treatment to reinforce the patient's own defenses and to allow his/her own resources to aid in recovery

  M. Medical treatment--Treatment of disease by the administration of internal remedies

  N. Surgical treatment--Treatment of diseases, wholly or in part, by manual and operative procedures

  O. Hemorrhage--Abnormal discharge of blood from the vessels into the tissues, into the body, or from the body

  P. Ligature--Cord or thread used for tying a blood vessel

  Q. Dyscrasia--Abnormal state or disorder of the body

INFORMATION SHEET

R. Blood dyscrasia--Any abnormal condition of the formed elements of the blood or of the constituents required for clotting

S. Shock--Depressed condition of many of the body functions due to failure of enough blood to circulate through the body

T. Antipyretic--Agent that reduces or prevents fever

U. Flatus--Gas or air in the gastrointestinal tract

II. Causes of illness

A. Predisposing causes

1. Age
2. Heredity
3. Sex
4. General physical condition
5. Environment

B. Specific causes

1. Congenital defects and prenatal influences such as drugs, x-rays, infections, and heredity
2. Injury, either physical or mental
3. Deficiency diseases such as inherited deficiencies or environmental deficiencies
4. Neoplasms, benign or malignant growths
5. Infections involving part or whole system
6. Malfunction of a part or system
7. Chemical agents such as accidental or intentional ingestion of drugs, poisons, gases, or other potentially harmful substances
8. Emotional stress
9. Idiopathy

INFORMATION SHEET

III. Purposes of treatment

- A. Cure if possible
    - 1. By specific means for a specific condition, such as surgical repair of an injury or an antibiotic for an infection
    - 2. By helping the body with its own defenses through therapy such as bed rest, diet, and fluid intake
- B. Alter the progress and outcome
    - 1. By early diagnosis and arrest
    - 2. By reducing disability through therapy and rehabilitation
- C. Provide supportive therapy in noncurable conditions
    - 1. To maintain function as nearly normal as possible
    - 2. To provide analgesics, increased food and fluid, and other therapy as needed for comfort

IV. Signs and symptoms of illness

- A. Inflammation and infection
- B. Change in cardinal signs
- C. Pain
- D. Hemorrhage
- E. Shock
- F. Gastric distress
- G. Intestinal distress
- H. Cardio-respiratory distress
- I. Urinary distress
- J. Neurological distress
- K. Fluid and electrolyte imbalance

INFORMATION SHEET

V. Symptoms of inflammation and infection

   A. Local

      1. Swelling
      2. Pain
      3. Tenderness
      4. Redness
      5. Heat
      6. Loss of function

   B. Systemic

      1. Abnormal temperature
      2. Changed pulse or respiratory rate
      3. Headache
      4. Restlessness or listlessness
      5. Flushed skin
      6. General aching
      7. Nausea
      8. Vomiting
      9. Increased WBC
      10. Change in fluid balance

VI. Factors which influence cardinal signs

   A. Illness

   B. Infection

   C. Dehydration

INFORMATION SHEET

D. External temperature

E. Abnormalities in the brain such as injury, edema, tumors, or toxic substances

F. Administration of vaccines or sera

G. Faulty metabolism or body function

VII. Observations of pain

A. Subjective

1. Type--Superficial or deep pain
2. Occurrence--Continuous or intermittent
3. Character--Sharp, dull, throbbing, aching, prickling, burning, cutting
4. Location
5. Degree--Mild, moderate, severe
6. Onset--Sudden, gradual, following movement or stress

B. Objective

1. Skin--Becomes pale, cool, and moist or red and hot
2. Facial expression--Appears drawn, distorted, or frightened
3. Pulse--Increase or decrease of rate and strength
4. Respirations--Increase of rate
5. Blood pressure--May rise or fall
6. Skeletal muscles--May become tense or rigid
7. Gastric distress--Retching with or without vomiting; anorexia
8. Physical activity--May be restless or may move only as necessary
9. Position--May assume one position for long intervals
10. Mental and emotional activity--May become quiet and apathetic or complaintive and demanding or irritable

INFORMATION SHEET

VIII. Causes of hemorrhage

- A. Injury, physical or chemical
- B. Wounds
- C. Surgical incisions
- D. Loosened or slipped ligature
- E. Blood dyscrasias
- F. Medications such as anticoagulants
- G. Complications of childbirth
- H. Ruptured blood vessels

IX. Sources and characteristics of hemorrhage

- A. Arterial--Bright red, spurting or flowing intermittently
- B. Venous--Dark red, continuous flow
- C. Capillary--Oozing continuously

X. Symptoms of hemorrhage

- A. Pale, cold, moist skin
- B. Chilliness
- C. Lowered blood pressure
- D. Decreased temperature
- E. Increased pulse rate
- F. Increase respirations
- G. Air hunger
- H. Restlessness
- I. Apprehension
- J. Thirst
- K. General weakness
- L. Bloody or coffee-grounds emesis if bleeding is gastric

INFORMATION SHEET

M. Dark, tarry stools if bleeding is intestinal

N. Unconsciousness

XI. Types of shock and causes

A. Neurogenic--Psychologic factors such as pain or fright

B. Hematogenic--Decreased blood volume as in severe bleeding or from loss of plasma in burns or extensive injury

C. Cardiogenic--Impaired function of the heart

D. Anaphylactic--Hypersensitivity to foreign protein or drug

E. Septic--Bacterial infection

F. Electrical--Passage of an electric current through the body

G. Insulin--Overdose of insulin

XII. Symptoms of shock

(NOTE: These may appear gradually or suddenly.)

A. Restlessness or lethargy

B. Dizziness

C. Thirst

D. Nausea or vomiting

E. Slight pulse increase followed by feeble, rapid pulse

F. Decreased blood pressure

G. Shallow respirations

H. Gradual decrease of temperature

I. Cyanosis of lips, ear lobes, and fingernails

J. Cold, clammy skin

K. Pallor

L. Mental confusion

M. Unconsciousness

INFORMATION SHEET

XIII. Types of gastric distress and their symptoms

- A. Anorexia
    1. Subjective statements
    2. Decreased food and fluid intake
    3. Refusal of fluid
- B. Nausea
    1. Subjective statements
    2. Increased salivation or gagging
    3. Pallor
    4. Increase or decrease in pulse rate
    5. Excessive perspiration
- C. Vomiting

  (NOTE: Onset may be sudden with little or no warning.)

    1. Nausea
    2. Pain in epigastric region
    3. Weakness
    4. Fatigue

XIV. Types of intestinal distress and their symptoms

- A. Diarrhea
    1. Frequent, soft, watery, or loose feces
    2. Urgency to defecate
    3. Abdominal cramping or pain
    4. Decreased urination
    5. Symptoms of dehydration such as dry mouth, dry lips, or thirst
    6. Fatigue, weakness, and general malaise

INFORMATION SHEET

B. Constipation

1. Infrequent, dry, hard feces
2. Pain and straining on defecation
3. Abdominal distention
4. Headache
5. Loss of appetite
6. Flatus

C. Flatus

1. Abdomen distended
2. Subjective symptoms of discomfort, feeling of fullness or being bloated
3. Abdominal pain
4. Expulsion of flatus in small or large amounts

XV. Symptoms of cardio-respiratory distress

A. Dyspnea or orthopnea

B. Cyanosis

C. Increase in depth or rate of respirations

D. Use of accessory muscles in breathing

E. Distressed appearance

F. Pale, cold skin

G. Pain, tingling, or dizziness

H. Slow reactions and mental responses

I. Anxiety, restlessness, or irritability

J. Weakness and fatigue

INFORMATION SHEET

XVI. Symptoms of urinary distress

- A. Incontinence
- B. Bladder distention
- C. Retention with overflow
- D. Dysuria
- E. Oliguria
- F. Hematuria
- G. Nocturia
- H. Urgency

XVII. Neurological distress

- A. Symptoms--Varying states of consciousness from drowsiness to deep coma
- B. Causes
  1. Drugs
  2. Upset in physiology
  3. Edema
  4. Cerebral vascular accident
  5. Increased cranial pressure
  6. Anesthesia
  7. Brain damage
  8. Injury

XVIII. Fluid balance and imbalance

- A. More than one-half of the body is fluid
- B. Volume of body fluid is affected by weather, time of day, exercise, body temperature, and fluid intake
- C. Body fluids are composed of water, oxygen, glucose, amino acids, fatty materials, and electrolytes

INFORMATION SHEET

D. Electrolytes are vital to cell and tissue activity and must be present in the proper amounts and strengths

(NOTE: Examples of electrolytes are potassium, bicarbonate, sulfate, magnesium, phosphate, sodium, and chloride.)

E. Presence of electrolytes in the proper amounts and strengths is called *electrolyte balance*

F. Two-thirds of the body fluids are located within the cells and are called *intracellular fluids*; the remaining one-third is in the spaces outside the cells and is called *extracellular fluid*

G. All tissues and organs work together to maintain homeostasis, a constant and balanced internal environment

H. Homeostasis is essential to life and health; imbalances may cause illness and can be fatal if severe or prolonged

I. Maintaining homeostasis is a complicated process and is under constant scientific study

XIX. Symptoms of fluid imbalance

A. General weakness

B. Headache

C. Gastrointestinal symptoms such as nausea, vomiting, cramping, diarrhea, anorexia, or constipation

D. Muscle spasm or twitching

E. Oliguira or anuria

F. Dehydration

G. Edema

H. Shock

I. Convulsions

J. Coma

INFORMATION SHEET

XX. General nursing responsibilities for medical-surgical patients

A. Provide for physical comfort and safety

1. Keep skin clean and dry
2. Give range of motion exercises to aid circulation and prevent contractures
3. Change position frequently
4. Maintain body alignment
5. Keep linens clean and free of wrinkles
6. Provide warmth as needed
7. Use safety measures as indicated such as side rails or methods to alleviate pressure and maintain alignment
8. Assist as indicated in emergencies or with treatment

B. Observe the patient's condition

1. Take vital signs as prescribed
2. Note intake of food and fluids both oral and parenteral
3. Observe elimination; note time, amount, and character
4. Note the patient's level of consciousness and response
5. Note patient's complaints; quote exact words when pertinent
6. Report and/or record observations accurately

C. Provide emotional support

1. Explain regulations, procedures, and treatments
2. Encourage the patient to discuss concerns and ask questions
3. Report the patient's concerns and questions to the proper person
4. Support the patient's trust and confidence in the physician and prescribed treatment
5. Respect spiritual beliefs and provide for spiritual comfort

INFORMATION SHEET

6. Reassure patient in periods of extreme stress by remaining calm and helpful

7. Show understanding and acceptance of patient's behavior

D. Provide support to physician and nursing personnel

1. Participate in planning nursing care to understand what outcome is expected and how nursing personnel can help achieve that outcome

2. Be aware of what is being done by other nursing personnel

3. Avoid expressing adverse observations concerning the patient's illness or physician or other personnel

XXI. Nursing responsibilities for specific conditions

A. Inflammation and infection

1. Observe medical asepsis as indicated

2. Protect affected area from further injury or complications

3. Provide rest for affected part

4. Apply heat or cold as prescribed

5. Monitor vital signs

B. Change in cardinal signs

1. Encourage fluid intake

2. Monitor vital signs frequently

3. Administer medications as prescribed

(NOTE: Commonly used antipyretics include aspirin and aspirin compounds, Tempra, Tylenol, Parodyne, and Pyralgin.)

4. Provide heat or cold as prescribed

(NOTE: Warm or cool dressings or soaks may be used for localized inflammation or infection. Tepid sponges or baths and hypothermia units are examples of treatments which affect temperature.)

INFORMATION SHEET

C. Pain

1. Keep patient quiet
2. Provide change of position or activity to assist in eliminating pain
3. Observe for nonverbal expression of pain
4. Administer medication as prescribed; give medication, if possible, before pain is too severe
5. Observe what measures relieved pain or failed to relieve pain

D. Hemorrhage

1. Report any bleeding immediately
2. Observe frequently for any change in color, rate, or amount of bleeding
3. Observe for shock
4. Apply pressure or pressure dressings as indicated; do not use tourniquets
5. Check vital signs frequently
6. Keep patient quiet
7. Position as indicated

E. Shock

1. Report symptoms immediately
2. Place patient in flat position unless contraindicated
3. Check blood pressure, pulse, and respirations frequently, usually every fifteen minutes; temperature may be indicated as often as every thirty minutes
4. Maintain body temperature

   (NOTE: Avoid getting the patient too warm; this may cause increased perspiration and fluid loss.)
5. Treat the cause of shock as indicated
   a. Relieve pain
   b. Control hemorrhages
   c. Splint fracture

INFORMATION SHEET

6. Keep patient quiet
7. Observe frequently
8. Administer oxygen if indicated

F. Gastric distress

1. Provide mouth care frequently
2. Assist with eating and drinking as indicated
3. Keep environment clean and attractive to encourage appetite
4. Observe for possible causes of gastric distress and eliminate if possible
5. Assist patient as needed during nausea or vomiting

G. Intestinal distress

1. Observe type and amount of defecation
2. Provide food and fluids as indicated
3. Administer medication, enemas, or suppositories as prescribed
4. Place patient in sitting position for defecation if possible
5. Provide anal and perineal care as needed
6. Observe proper handwashing for patient as well as nursing personnel
7. Assist with movement such as turning, sitting, or ambulation to aid elimination
8. Use treatment or medication as prescribed to eliminate flatus

   (NOTE: Treatment may include carminitive enema, rectal tube, heat to abdomen, or parenteral injections.)

H. Cardio-respiratory distress

1. Observe respirations
   a. Movement of chest
   b. Depth and rate of respirations

INFORMATION SHEET

        c. Breathing sounds
        d. Position assumed
        e. Presence of cough
        f. Mental and physical reactions
    2. Position patient to aid breathing
        a. Fowler's position if patient is responsive
        b. Sims' position if patient is unconscious
        c. Change position frequently
    3. Keep patient quiet
        a. Anticipate needs
        b. Place articles within easy reach
        c. Assist with feeding if appropriate
        d. Work slowly

I. Urinary distress
    1. Observe, record, and report any difficulty
        a. Inability to void
        b. Frequency
        c. Urgency
        d. Absence of need to void
        e. Amount and time of urinations
        f. Any subjective symptoms such as pain, burning, or straining
        g. Appearance, color, and odor of urine
    2. Save specimen
        a. When prescribed
        b. When abnormality is noted

INFORMATION SHEET

3. Assist to void
    a. Provide privacy
    b. Provide sound of running water
    c. Position for comfort and in natural voiding position unless contraindicated
    d. Give bedpan or urinal promptly
4. Measure intake and output
5. Provide diet and fluids as prescribed
6. Provide emotional support
    a. Allow time for personal care
    b. Permit patient to ask questions
    c. Explain procedures and treatments

J. Neurological distress

1. Note patient's response to stimuli such as noise, light, touch, and movement; record response in detail and with exactness
2. Observe marked increase or decrease of symptoms
3. Watch for signs of dehydration
4. Monitor vital signs frequently
5. Control environment
    a. Keep room quiet; avoid loud talking
    b. Avoid discussion of patient's condition and treatment in or near the unit
    c. Keep unit clean and odor-free
    d. Avoid sudden change in lighting
6. Maintain patent airway
    a. Position to facilitate breathing and drainage of secretions from nose and mouth

INFORMATION SHEET

  b. Suction as needed
  c. Stay at bedside constantly if patient is vomiting

7. Support patient when changing position
8. Protect eyes from excessive light and dryness
9. Observe for signs of convulsions

K. Fluid imbalance

1. Maintain intake and output
2. Administer fluids as prescribed
    a. Encourage fluid intake unless ordered otherwise
    b. Provide fluids patient prefers
    c. Offer small amounts frequently
    d. Explain necessity of fluid intake as prescribed
3. Observe for signs of dehydration
4. Check weight as directed
5. Provide mouth care frequently
6. Observe any unusual symptoms and provide care as indicated
7. Observe symptoms of edema
8. Aid in alleviation of edema as prescribed
    a. Administer medications such as diuretics
    b. Limit fluid and salt intake
    c. Elevate affected part
    d. Assist with treatments such as application of elastic bandages or stockings

INTRODUCTION TO MEDICAL SURGICAL NURSING
UNIT I

ASSIGNMENT SHEET #1--DESCRIBE THE SYMPTOMS, TREATMENT, AND CARE OF A SPECIFIC PATIENT

Select a patient you have cared for recently and write a paper about that patient including:

1. Brief history of the current illness
2. Description of condition at the time care was given
3. Type of care given
4. Observations made while caring for the patient
5. Any suggestions for improving the care you gave

INTRODUCTION TO MEDICAL SURGICAL NURSING
UNIT I

TEST

1. Match the terms on the right to the correct definition. (Answers for "a" through "l" are on this page.)

______a. State of being ill or sick; any deviation from the normal functioning of the body; sickness; disease; disorder

______b. Not malignant or recurrent

______c. Change in body tissues brought about by pathogenic organisms

______d. Study of the causes of diseases or abnormal conditions; cause or origin of a disease

______e. Any abnormal condition of the formed elements of the blood or of the constituents required for clotting

______f. Abnormal state or disorder of the body

______g. Prediction as to the probable course and outcome of a disease, injury, or abnormality

______h. Study of disease processes in the body

______i. Agent that reduces or prevents fever

______j. Existing before or at birth

______k. Recognition of a disease state from varied symptoms, examinations, and tests

______l. Depressed condition of many of the body functions due to failure of enough blood to circulate through the body

1. Dyscrasia
2. Diagnosis
3. Pathology
4. Illness
5. Shock
6. Infection
7. Antipyretic
8. Benign
9. Congenital
10. Etiology
11. Prognosis
12. Blood dyscrasia

(Answers for "m" through "u" are on this page.)

______m. Any form of treatment to reinforce the patient's own defenses and to allow his/her own resources to aid in recovery

______n. Pertaining to or denoting progressive growth of certain tumors which may spread to other sites if not checked by treatment

______o. Treatment of diseases, wholly or in part, by manual and operative procedures

______p. Abnormal discharge of blood from the vessels into the tissues, into the body, or from the body

______q. Treatment of disease by the administration of internal remedies

______r. Primary disease which is not a result of any other disease or one for which no cause is known

______s. Cord or thread used for tying a blood vessel

______t. Gas or air in the gastrointestinal tract

______u. New tissue mass or growth

13. Medical treatment
14. Neoplasm
15. Supportive therapy
16. Ligature
17. Hemorrhage
18. Flatus
19. Surgical treatment
20. Idiopathy
21. Malignant

2. List three predisposing causes and six specific causes of illness.

a. Predisposing causes

1)

2)

3)

b. Specific causes

1)

2)

3)

4)

5)

6)

3. Describe the three purposes of treatment.

   a.

   b.

   c.

4. List signs and symptoms of illness.

   a.
   b.
   c.
   d.
   e.
   f.
   g.
   h.
   i.
   j.
   k.

5. List four local and six systemic symptoms of inflammation and infection.

   a. Local

      1)
      2)
      3)
      4)

b. Systemic

1)

2)

3)

4)

5)

6)

6. List five factors which influence cardinal signs.

a.

b.

c.

d.

e.

7. List four subjective and six objective observations of pain.

a. Subjective

1)

2)

3)

4)

b. Objective

1)

2)

3)

4)

5)

6)

8. List six causes of hemorrhage.

   a.

   b.

   c.

   d.

   e.

   f.

9. List the three primary sources of hemorrhage and the characteristics of each.

   a.

   b.

   c.

10. List eight symptoms of hemorrhage.

    a.

    b.

    c.

    d.

    e.

    f.

    g.

    h.

11. Match types of shock on the right to the correct description.

______a. Bacterial infection

______b. Overdose of insulin

______c. Psychologic factors such as pain or fright

______d. Passage of an electric current through the body

______e. Hypersensitivity to foreign protein or drug

______f. Impaired function of the heart

______g. Decreased blood volume as in severe bleeding or from loss of plasma in burns or extensive injury

1. Hematogenic
2. Electrical
3. Cardiogenic
4. Insulin
5. Neurogenic
6. Anaphylactic
7. Septic

12. List ten symptoms of shock.

a.

b.

c.

d.

e.

f.

g.

h.

i.

j.

13. List the three types of gastric distress and the symptoms of each.

a.

b.

c.

14. List three types of intestinal distress and the symptoms of each.

a.

b.

c.

15. List six symptoms of cardio-respiratory distress.

a.
b.
c.
d.
e.
f.

16. List five symptoms of urinary distress.

a.
b.
c.
d.
e.

17. List symptoms and five causes of neurological distress.

a. Symptoms

b. Causes

1)
2)
3)
4)
5)

18. Discuss fluid balance and imbalance.

19. List six symptoms of fluid imbalance.

a.

b.

c.

d.

e.

f.

20. Describe general nursing responsibilities for medical-surgical patients.

a. Provide for physical comfort and safety

b. Observe the patient's condition

c. Provide emotional support

d. Provide support to physician and nursing personnel

21. Describe nursing responsibilities for the following specific conditions.

    a. Inflammation and infection

    b. Change in cardinal signs

    c. Pain

    d. Hemorrhage

    e. Shock

    f. Gastric distress

    g. Intestinal distress

    h. Cardio-respiratory distress

    i. Urinary distress

    j. Neurological distress

    k. Fluid imbalance

22. Describe the symptoms, treatment, and care of a specific patient.

    (NOTE: If this has not been accomplished prior to the test, ask the instructor when the above activity should be completed.)

INTRODUCTION TO MEDICAL SURGICAL NURSING
UNIT 1

ANSWERS TO TEST

1.
- a. 4
- b. 8
- c. 6
- d. 10
- e. 12
- f. 1
- g. 11
- h. 3
- i. 7
- j. 9
- k. 2
- l. 5
- m. 15
- n. 21
- o. 19
- p. 17
- q. 13
- r. 20
- s. 16
- t. 18
- u. 14

2. a. Any three of the following predisposing causes:

    1) Age
    2) Heredity
    3) Sex
    4) General physical condition
    5) Environment

   b. Any six of the following specific causes:

    1) Congenital defects and prenatal influences such as drugs, x-rays, infections, and heredity
    2) Injury, either physical or mental
    3) Deficiency diseases such as inherited deficiencies or environmental deficiencies
    4) Neoplasms, benign or malignant growths
    5) Infections involving part or whole system
    6) Malfunction of a part or system
    7) Chemical agents such as accidental or intentional ingestion of drugs, poisons, gases, or other potentially harmful substances

   8) Emotional stress
   9) Idiopathy

3. Description should include:
   a. Cure if possible
      1) By specific means for a specific condition, such as surgical repair of an injury or an antibiotic for an infection
      2) By helping the body with its own defenses through therapy such as bed rest, diet, and fluid intake
   b. Alter the progress and outcome
      1) By early diagnosis and arrest
      2) By reducing disability through therapy and rehabilitation
   c. Provide supportive therapy in noncurable conditions
      1) To maintain function as nearly normal as possible
      2) To provide analgesics, increased food and fluid, and other therapy as needed for comfort

4. a. Inflammation and infection
   b. Change in cardinal signs
   c. Pain
   d. Hemorrhage
   e. Shock
   f. Gastric distress
   g. Intestinal distress
   h. Cardio-respiratory distress
   i. Urinary distress
   j. Neurological distress
   k. Fluid and electrolyte imbalance

5. a. Any four of the following:
    1) Swelling
    2) Pain
    3) Tenderness
    4) Redness
    5) Heat
    6) Loss of function
   b. Any six of the following:
    1) Abnormal temperature
    2) Changed pulse or respiratory rate
    3) Headache
    4) Restlessness or listlessness
    5) Flushed skin
    6) General aching
    7) Nausea
    8) Vomiting
    9) Increased WBC
    10) Change in fluid balance

6. Any five of the following:
   a. Illness
   b. Infection
   c. Dehydration
   d. External temperature
   e. Abnormalities in the brain such as injury, edema, tumors, or toxic substances
   f. Administration of vaccines or sera
   g. Faulty metabolism or body function

7. a. Any four of the following:

    1) Type--Superficial or deep pain

    3) Occurrence--Continuous or intermittent

    3) Character--Sharp, dull, throbbing, aching, prickling, burning, cutting

    4) Location

    5) Degree--Mild, moderate, severe

    6) Onset--Sudden, gradual, following movement or stress

   b. Any five of the following:

    1) Skin--Becomes pale, cool, and moist or red and hot

    2) Facial expression--Appears drawn, distorted, or frightened

    3) Pulse--Increase or decrease of rate and strength

    4) Respirations--Increase of rate

    5) Blood pressure--May rise or fall

    6) Skeletal muscles--May become tense or rigid

    7) Gastric distress--Nausea with or without vomiting; anorexia

    8) Physical activity--May be restless or may move only as necessary

    9) Position--May assume one position for long intervals

    10) Mental and emotional activity--May become quiet and apathetic or complaintive and demanding or irritable

8. Any six of the following:

   a. Injury, physical or chemical

   b. Wounds

   c. Surgical incisions

   d. Loosened or slipped ligature

   e. Blood dyscrasias

   f. Medications such as anticoagulants

g. Complications of childbirth

h. Ruptured blood vessels

9. a. Arterial--Bright red, spurting or flowing intermittently

b. Venous--Dark red, continuous flow

c. Capillary--Oozing continuously

10. Any eight of the following:

a. Pale, cold, moist skin

b. Chilliness

c. Lowered blood pressure

d. Decreased temperature

e. Increased pulse rate

f. Increased respirations

g. Air hunger

h. Restlessness

i. Apprehension

j. Thirst

k. General weakness

l. Bloody or coffee-grounds emesis if bleeding is gastric

m. Dark, tarry stools if bleeding is intestinal

n. Unconsciousness

11. a. 7

b. 4

c. 5

d. 2

e. 6

f. 3

g. 1

12. Any ten of the following:

a. Restlessness or lethargy

b. Dizziness

c. Thirst

d. Nausea or vomiting

e. Slight pulse increase followed by feeble, rapid pulse

f. Decreased blood pressure

g. Shallow respirations

h. Gradual decrease of temperature

i. Cyanosis of lips, ear lobes, and fingernails

j. Cold, clammy skin

k. Pallor

l. Mental confusion

m. Unconsciousness

13. a. Anorexia

  1) Subjective statements

  2) Decreased food and fluid intake

  3) Refusal of fluid

b. Nausea

  1) Subjective statements

  2) Increased salivation or gagging

  3) Pallor

  4) Increase or decrease in pulse rate

  5) Excessive perspiration

c. Vomiting

  1) Nausea

  2) Pain in epigastric region

  3) Weakness

  4) Fatigue

14. a. Diarrhea
    1) Frequent, soft, watery, or loose feces
    2) Urgency to defecate
    3) Abdominal cramping or pain
    4) Decreased urination
    5) Symptoms of dehydration such as dry mouth, dry lips, or thirst
    6) Fatigue, weakness, and general malaise

    b. Constipation
    1) Infrequent, dry, hard feces
    2) Pain and straining on defecation
    3) Abdominal distention
    4) Headache
    5) Loss of appetite
    6) Flatus

    c. Flatus
    1) Abdomen distended
    2) Subjective symptoms of discomfort, feeling of fullness or being bloated
    3) Abdominal pain
    4) Expulsion of flatus in small or large amounts

15. Any six of the following:
    a. Dyspnea or orthopnea
    b. Cyanosis
    c. Increase in depth or rate of respirations
    d. Use of accessory muscles in breathing
    e. Distressed appearance
    f. Pale, cold skin

g. Pain, tingling, or dizziness

h. Slow reactions and mental responses

i. Anxiety, restlessness, or irritability

j. Weakness and fatigue

16. Any five of the following:

a. Incontinence

b. Bladder distention

c. Retention with overflow

d. Dysuria

e. Oliguria

f. Hematuria

g. Nocturia

h. Urgency

17. a. Symptoms--Varying states of consciousness from drowsiness to deep coma

b. Any five of the following:

1) Drugs

2) Upset in physiology

3) Edema

4) Cerebral vascular accident

5) Increased cranial pressure

6) Anesthesia

7) Brain damage

8) Injury

18. Discussion should include:

a. More than one-half of the body is fluid

b. Volume of body fluid is affected by weather, time of day, exercise, body temperature, and fluid intake

c. Body fluids are composed of water, oxygen, glucose, amino acids, fatty materials, and electrolytes

d. Electrolytes are vital to cell and tissue activity and must be present in the proper amounts and strengths

e. Presence of electrolytes in the proper amounts and strengths is called *electrolyte balance*

f. Two-thirds of the body fluids are located within the cells and are called *intracellular fluids*; the remaining one-third is in the spaces outside the cells and is called *extracellular fluid*

g. All tissues and organs work together to maintain homeostasis, a constant and balanced internal environment

h. Homeostasis is essential to life and health; imbalances may cause illness and can be fatal if severe or prolonged

i. Maintaining homeostasis is a complicated process and is under constant scientific study

19. Any six of the following:

a. General weakness

b. Headache

c. Gastrointestinal symptoms such as nausea, vomiting, cramping, diarrhea, anorexia, or constipation

d. Muscle spasm or twitching

e. Oliguria or anuria

f. Dehydration

g. Edema

h. Shock

i. Convulsions

j. Coma

20. Description should include:

a. Provide for physical comfort and safety

1) Keep skin clean and dry

2) Give range of motion exercises to aid circulation and prevent contractures

    3) Change position frequently
    4) Maintain body alignment
    5) Keep linens clean and free of wrinkles
    6) Provide warmth as needed
    7) Use safety measures as indicated such as side rails or methods to alleviate pressure and maintain alignment
    8) Assist as indicated in emergencies or with treatment

b. Observe the patient's condition

    1) Take vital signs as prescribed
    2) Note intake of food and fluids both oral and parenteral
    3) Observe elimination; note time, amount, and character
    4) Note the patient's level of consciousness and response
    5) Note patient's complaints; quote exact words when pertinent
    6) Report and/or record observations accurately

c. Provide emotional support

    1) Explain regulations, procedures, and treatments
    2) Encourage the patient to discuss concerns and ask questions
    3) Report the patient's concerns and questions to the proper person
    4) Support the patient's trust and confidence in the physician and prescribed treatment
    5) Respect spiritual beliefs and provide for spiritual comfort
    6) Reassure patient in periods of extreme stress by remaining calm and helpful
    7) Show understanding and acceptance of patient's behavior

d. Provide support to physician and nursing personnel

    1) Participate in planning nursing care to understand what outcome is expected and how nursing personnel can help achieve that outcome
    2) Be aware of what is being done by other nursing personnel
    3) Avoid expressing adverse observations concerning the patient's illness or physician or other personnel

21. Description should include:

a. Inflammation and infection

    1) Observe medical asepsis as indicated

    2) Protect affected area from further injury or complications

    3) Provide rest for affected part

    4) Apply heat or cold as prescribed

    5) Monitor vital signs

b. Change in cardinal signs

    1) Encourage fluid intake

    2) Monitor vital signs frequently

    3) Administer medications as prescribed

    4) Provide heat or cold as prescribed

c. Pain

    1) Keep patient quiet

    2) Provide change of position or activity to assist in eliminating pain

    3) Observe for nonverbal expression of pain

    4) Administer medication as prescribed; give medication, if possible, before pain is too severe

    5) Observe what measures relieved pain or failed to relieve pain

d. Hemorrhage

    1) Report any bleeding immediately

    2) Observe frequently for any change in color, rate, or amount of bleeding

    3) Observe for shock

    4) Apply pressure or pressure dressings as indicated; do not use tourniquets

    5) Check vital signs frequently

    6) Keep patient quiet

    7) Position as indicated

e. Shock

1) Report symptoms immediately

2) Place patient in flat position unless contraindicated

3) Check blood pressure, pulse, and respirations frequently, usually every fifteen minutes; temperature may be indicated as often as every thirty minutes

4) Maintain body temperature

5) Treat the cause of shock as indicated

    a) Relieve pain

    b) Control hemorrhages

    c) Splint fracture

6) Keep patient quiet

7) Observe frequently

8) Administer oxygen if indicated

f. Gastric distress

1) Provide mouth care frequently

2) Assist with eating and drinking as indicated

3) Keep environment clean and attractive to encourage appetite

4) Observe for possible causes of gastric distress and eliminate if possible

5) Assist patient as needed during nausea or vomiting

g. Intestinal distress

1) Observe type and amount of defecation

2) Provide food and fluids as indicated

3) Administer medication, enemas, or suppositories as prescribed

4) Place patient in sitting position for defecation if possible

5) Provide anal and perineal care as needed

6) Observe proper handwashing for patient as well as nursing personnel

7) Assist with movement such as turning, sitting, or ambulation to aid elimination

8) Use treatment or medication as prescribed to eliminate flatus

h. Cardio-respiratory distress

1) Observe respirations
   - a) Movement of chest
   - b) Depth and rate of respirations
   - c) Breathing sounds
   - d) Position assumed
   - e) Presence of cough
   - f) Mental and physical reactions

2) Position patient to aid breathing
   - a) Fowler's position if patient is responsive
   - b) Sims's position if patient is unconscious
   - c) Change position frequently

3) Keep patient quiet
   - a) Anticipate needs
   - b) Place articles within easy reach
   - c) Assist with feeding if appropriate
   - d) Work slowly

i. Urinary distress

1) Observe, record, and report any difficulty
   - a) Inability to void
   - b) Frequency
   - c) Urgency
   - d) Absence of need to void
   - e) Amount and time of urinations
   - f) Any subjective symptoms such as pain, burning, or straining
   - g) Appearance, color, and odor of urine

2) Save specimen

  a) When prescribed

  b) When abnormality is noted

3) Assist to void

  a) Provide privacy

  b) Provide sound of running water

  c) Position for comfort and in natural voiding position unless contraindicated

  d) Give bedpan or urinal promptly

4) Measure intake and output

5) Provide diet and fluids as prescribed

6) Provide emotional support

  a) Allow time for personal care

  b) Permit patient to ask questions

  c) Explain procedures and treatments

j. Neurological distress

1) Note patient's response to stimuli such as noise, light, touch, and movement; record response in detail and with exactness

2) Observe marked increase or decrease of symptoms

3) Watch for signs of dehydration

4) Monitor vital signs frequently

5) Control environment

  a) Keep room quiet; avoid loud talking

  b) Avoid discussion of patient's condition and treatment in or near the unit

  c) Keep unit clean and odor-free

  d) Avoid sudden change in lighting

6) Maintain patent airway
    - a) Position to facilitate breathing and drainage of secretions from nose and mouth
    - b) Suction as needed
    - c) Stay at bedside constantly if patient is vomiting

7) Support patient when changing position

8) Protect eyes from excessive light and dryness

9) Observe for signs of convulsions

k. Fluid imbalance

1) Maintain intake and output

2) Administer fluids as prescribed
    - a) Encourage fluid intake unless ordered otherwise
    - b) Provide fluids patient prefers
    - c) Offer small amounts frequently
    - d) Explain necessity of fluid intake as prescribed

3) Observe for signs of dehydration

4) Check weight as directed

5) Provide mouth care frequently

6) Observe any unusual symptoms and provide care as indicated

7) Observe symptoms of edema

8) Aid in alleviation of edema as prescribed
    - a) Administer medications such as diuretics
    - b) Limit fluid and salt intake
    - c) Elevate affected part
    - d) Assist with treatments such as application of elastic bandages or stockings

22. Evaluated to the satisfaction of the instructor.

NURSING THE FEMALE PATIENT WITH DISEASES OF THE REPRODUCTIVE SYSTEM

UNIT II

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to list symptoms and treatments for diseases of the female reproductive system. The student should be able to discuss and/or describe tests and surgeries and nursing responsibilities for each. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with diseases of the female reproductive system to the correct definitions.
2. Discuss the gynecological examination including description and nursing responsibilities.
3. Describe diagnostic tests including Papanicolaou, Rubin, hysterosalpingogram, and culdoscopy.
4. Discuss etiology and treatment of disturbances of menstrual function: dysmenorrhea, amenorrhea, menorrhagia, metrorrhagia, and premenstrual tension.
5. Discuss etiology, symptoms, and treatment of cervicitis and vaginitis.
6. Discuss etiology and transmission, symptoms, treatment, complications, and nursing responsibilities in pelvic inflammatory disease.
7. List the following factors concerning gonorrhea: etiology, incidence, diagnosis, transmission, symptoms, complications, treatment, and nursing responsibilities.
8. List the following factors concerning syphilis: etiology, incidence, diagnosis, transmission, symptoms, stages, treatment, effects, and nursing responsibilities.
9. Match types of surgery and abnormalities of the female reproductive system to the correct definitions.
10. List etiology, symptoms, and treatments for retroversion and/or retroflexion.
11. List etiology, symptoms, and treatment of cystocele, rectocele, and prolapse.

12. List symptoms and treatment of benign ovarian and uterine tumors.
13. Discuss incidence, etiology, symptoms, method of diagnosis, and treatment of cancer of the cervix.
14. Discuss symptoms and treatment of cancer of the fundus of the uterus.
15. Discuss preoperative and postoperative responsibilities for patients having abdominal surgery.
16. Discuss preoperative and postoperative care for patients having surgical repair of the vagina or vaginal hysterectomy.
17. Discuss diagnostic evaluation for diseases of the breast including diagnostic tests.
18. Discuss incidence, symptoms, and treatment of acute mastitis, chronic cystic mastitis, and fibroadenomata.
19. Discuss incidence, predisposition, and symptoms of cancer of the breast.
20. Discuss nursing responsibilities for patients having surgery of the breast.

NURSING THE FEMALE PATIENT WITH DISEASES OF THE REPRODUCTIVE SYSTEM
UNIT II

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information sheet.

   C. Make transparency.

   D. Contact the American Cancer Society for educational aids.

   E. Discuss terminal and specific objectives.

   F. Discuss information sheet.

   (NOTE: Diseases of the reproductive system in the male will be covered in "Nursing the Patient with Diseases of the Urinary System," *Nursing III.*

   G. Give test.

II. Student:

   A. Read objectives.

   B. Read information sheet.

   C. Participate in discussion.

   D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Transparency master: TM 1--Vaginal Speculum

   D. Test

   E. Answers to test

II. References:

A. Brunner, Lillian S. et al. *The Lippincott Manual of Nursing Practice.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1974.

B. Johnston, Dorothy F. *Total Patient Care.* St. Louis, Missouri: The C. V. Mosby Company, 1972.

C. Smith, Genevieve E. *A Teaching Plan for the Practical Nursing Curriculum.* New Brunswick, New Jersey: Rutgers State University, 1973.

D. Thompson, Ella M., and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

III. Other materials:

A. Films

1. "Five Minutes for Breast Self-Examination." American Cancer Society.
2. "Time Out for Life." American Cancer Society.
3. "For a Wonderful Life." American Cancer Society.
4. "Time and Two Women." American Cancer Society.

   (NOTE: The above films are available to Oklahoma instructors from the Oklahoma State Department of Health.)

5. "Female Pelvic Examination." Eli Lilly and Company.
6. "Gynecologic Laparoscopy." Upjohn Professional Film Library.
7. "X-ray, Ultrasound, and Thermography in Diagnosis." Upjohn Professional Film Library.
8. "Very Early Warning." Association-Sterling Films.
9. "The Obsolete Menopause." Upjohn Professional Film Library.
10. "Cold-light Endoscopy." Upjohn Professional Film Library.

B. Filmstrips

1. Cancer Series 3. Concept Media.
   a. "Introduction to Cancer Surgery."
   b. "Mastectomy."
   c. "Hysterectomy."

2. "Cancer Detection: Self-Examination of the Breast and Pap Smear." Trainex Corporation.
3. "Breast Cancer and Mastectomy." Trainex Corporation.
4. "Cancer of the Uterus." Trainex Corporation.

C. Poster--"Your First Visit to the Gynecologist." The Life Cycle Center.

NURSING THE FEMALE PATIENT WITH DISEASES OF THE REPRODUCTIVE SYSTEM

UNIT II

INFORMATION SHEET

I. Terms and definitions

A. Gynecology--Study of the diseases of the reproductive system in women

B. Vaginal speculum--Instrument for dilating the vaginal canal to permit inspection (Transparency 1)

C. Radiopaque--Not transparent to x-ray

D. Dysmenorrhea--Difficult or painful menstruation

E. Fibroid tumor--Fibroma; benign tumor composed principally of fibrous connective tissue

F. Endometritis--Inflammation of the endometrium

G. Endometriosis--Presence of endometrial tissue in abnormal locations, including the uterine wall, ovaries, or pelvic cavity

H. Amenorrhea--Absence of menstruation

I. Menorrhagia--Excessive menstrual flow

J. Intrauterine device; IUD--Any mechanical device placed in the uterus to prevent implantation or growth of the embryo

K. Metrorrhagia--Uterine hemorrhage at any time other than during the menstrual flow

L. Cervicitis--Inflammation of the cervix

M. Leukorrhea--Whitish, mucopurulent discharge from the female genital canal

N. Vaginitis--Inflammation of the vagina

O. Pelvic inflammatory disease; PID--Inflammation of the pelvic cavity involving the female reproductive organs

P. Retroversion of the uterus--Backward displacement of the uterus with the cervix pointing toward the symphysis pubis

Q. Retroflexion of the uterus--Fundus of the uterus is bent backward at an angle with the cervix in its usual position

INFORMATION SHEET

R. Pessary--Mechanical device inserted into the vagina for uterine support or contraception

S. Cystocele--Herniation of the urinary bladder into the vagina

T. Rectocele--Protrusion or herniation of the rectum into the vagina

U. Prolapse of the uterus--Displacement of the uterus downward into the vaginal cavity

V. Myoma--Tumor derived from muscle

(NOTE: Plural form is myomata.)

W. Radiation or irradiation--Exposure to rays such as infrared, ultraviolet, roentgen, or gamma rays

X. Mastitis--Inflammation of the breast

Y. Chronic cystic mastitis--Formation of benign, nodular cysts in the breast

Z. Fibroadenoma--Benign tumor containing both fibrous and glandular tissue

(NOTE: Plural form is fibroadenomata.)

II. The gynecological examination

A. Description

1. Inspection of the external genitalia for signs of inflammation, edema, bleeding, discharge, or local skin and epithelial changes

2. Visualization of the vagina by insertion of a speculum into the vaginal cavity

3. Palpation of the pelvic and lower abdominal organs through the vaginal and abdominal walls

4. Digital examination of the rectum

B. Nursing responsibilities

1. Provide psychological support and aid patients, particularly young girls, to relax by explanation and reassurance

2. Instruct the patient to avoid douching prior to the examination

3. Encourage the patient to urinate and/or defecate immediately before the examination

INFORMATION SHEET

4. Assemble equipment

5. Advise the patient which clothing to remove to facilitate the examination

6. Position and drape the patient

   a. Physician will designate the proper position

   b. Usual positions are lithotomy, Sims', or knee-chest

7. Focus the light and uncover the tray of equipment

8. Assist the physician with gloves and lubricant

9. Cleanse patient's vulva when examination is completed

10. Assist the patient to a comfortable position and allow to rest for a short time before dressing

11. Label and care for specimens

III. Diagnostic tests

A. Papanicolaou test, PAP smear, or cytology test--Cervical smear to aid in diagnosis of cervical cancer

B. Rubin test or tubal insufflation--Determination of the patency of the fallopian tubes by injecting carbon dioxide gas under pressure into the uterine cavity

(NOTE: When the examination is completed and the patient sits up, she will feel discomfort in the right shoulder and neck. This pain is caused by irritation of the diaphragmatic nerves when the carbon dioxide collects below the diaphragm. The gas absorbs quickly and the period of pain will be short. Absence of this typical discomfort indicates the tubes are not open.)

C. Hysterosalpingogram

1. Radiopaque dye is injected into the uterus and the fallopian tubes

2. X-rays are taken to show the patency and location of the tubes and any pathology of the uterus or tubes

INFORMATION SHEET

D. Culdoscopy

1. Test is performed under anesthesia

2. An endoscope is passed through the vaginal wall behind the cervix to visualize the internal organs and pelvic tissues

   (NOTE: The procedure is performed in surgery with the patient placed in a knee-chest position. Suturing is usually not necessary.)

IV. Disturbances of menstrual function

A. Dysmenorrhea

1. Etiology

   a. Functional factors such as constipation, poor posture, insufficient exercise, or fatigue

   b. Improper placement of a tampon

   c. Fibroid tumors of the uterus

   d. Chronic inflammation of the fallopian tubes

   f. Displacement of the uterus

   g. Endometritis

   h. Endometriosis

2. Treatment

   a. Physical exercises including walking, sitting-up exercises, knee bends, and toe touching

   b. Application of heat to lower abdomen

   c. Hot sitz bath if flow is not profuse

   d. Regulation of bowel movements

   e. Simple analgesics

   f. Medical consultation if pain is persistent or severe

INFORMATION SHEET

B. Amenorrhea

(NOTE: Amenorrhea is normal before puberty, during pregnancy and usually during lactation, and after menopause.)

1. Etiology
    - a. Nephritis
    - b. Tuberculosis
    - c. Endocrine disturbances
    - d. Malnutrition
    - e. Emotional stress
    - f. Malformations of reproductive system
2. Treatment--Based on the underlying cause and determined on an individual basis

C. Menorrhagia

1. Etiology
    - a. Fibroid tumors of the uterus
    - b. Endocrine disturbance
    - c. Intrauterine device or IUD
2. Treatment
    - a. Endocrine therapy
    - b. Dilatation and curettage; D and C

D. Metrorrhagia

1. Etiology
    - a. Malignancy
    - b. Lesions of the cervix or uterus
    - c. Oral contraceptives
2. Treatment--Based on the cause and determined on an individual basis

INFORMATION SHEET

E. Premenstrual tension

1. Etiology--Disturbance of the electrolyte balance

(NOTE: Symptoms include abdominal distention, headache, generalized edema, irritability, depression, and vomiting occasionally.)

2. Treatment

a. Salt-free diet during premenstrual cycle

b. Medication to increase the excretion of sodium ions

c. Analgesics

V. Infections

A. Cervicitis

1. Etiology

a. Staphylococci or streptococci infection

b. Gonorrhea

c. Cancer

d. Cervical erosion

2. Symptoms

a. Leukorrhea

b. Bleeding

c. Pain with sexual intercourse

3. Treatment

a. Douches

b. Cauterization of the cervix

(NOTE: A watery discharge occurs after cauterization. Six to eight weeks are required for complete healing after cautery.)

c. Antibiotics

INFORMATION SHEET

B. Vaginitis

  1. Etiology

    a. Trichomonas vaginalis

    b. Monilia albicans

    (NOTE: These infections may be transmitted through sexual intercourse.)

    c. Other pathogens

    d. Side effect of drug therapy

  2. Symptoms

    a. Leukorrhea, which may be profuse and odorous

    b. Perineal itching

    c. Burning of the urethra

    d. Pelvic pain occasionally

  3. Treatment

    a. Insertion of vaginal jelly or suppositories

    b. Vaginal douches

    c. Application of ointment to affected area

    d. Oral antifungal medications such as Flagyl and Candeptin

    (NOTE: Frequently the male partner is infected also and is treated concurrently. The conditions are difficult to cure and tend to recur.)

VI. Pelvic inflammatory disease or P.I.D.

  A. Etiology and transmission

    1. Tubercle bacillus enters the pelvic organs through the bloodstream

    2. Gonococci enter following sexual intercourse

    3. Streptococci or staphylococci enter through the bloodstream

INFORMATION SHEET

B. Symptoms

1. Foul-smelling vaginal discharge
2. Backache
3. Pelvic pain
4. Fever
5. Nausea
6. Vomiting
7. Dysmenorrhea

C. Treatment

1. Antibiotics
2. Fowler's position to encourage pelvic drainage
3. Sitz baths to relieve pain
4. Medicated douches
5. Heat to abdomen
6. No sexual intercourse while infection is present
7. Salpingectomy if condition does not respond to conservative treatment

D. Complications

1. Chronic infection
2. Abscess in pelvic cavity
3. Infection in male partner
4. Formation of adhesions in fallopian tubes
5. Sterility

E. Nursing responsibilities

1. Wash hands well
2. Dispose of soiled pads in a safe manner to avoid spread to self or other patients

INFORMATION SHEET

3. Maintain isolation precautions and wear gloves when giving perineal care if the infection is gonorrheal

4. Give perineal care after urination and pad changes when discharge is profuse

VII. Gonorrhea

(NOTE: Five diseases are classified as venereal diseases: gonorrhea, syphilis, chancroid, lymphogranuloma venereum, and granuloma inguinale. All are spread through sexual contact. However, gonorrhea and syphilis are the most prevalent of these diseases.)

A. Etiology--Gonococcus

B. Incidence

1. Most common venereal disease

2. Number one communicable disease in the United States

3. More widespread since the organisms are becoming resistant to penicillin

C. Diagnosis--Smear test of discharge

D. Transmission--Usually through sexual intercourse

E. Symptoms

1. Asymptomatic in some females

2. Yellowish, purulent discharge from vagina

F. Complications

1. Involvement of uterus and fallopian tubes

2. Sterility

3. Arthritis

4. Heart disease

G. Treatment

1. One dose of penicillin cures in ninety-five percent of cases receiving early treatment

2. Delayed treatment may permit further spread of the disease to other portions of the infected person and/or to other people

INFORMATION SHEET

H. Nursing responsibilities

1. Wash hands thoroughly after caring for the infected patient
2. Maintain isolation technique particularly of bedpan or toilet
3. Avoid touching the eyes while caring for the infected person
4. Wear gloves when performing procedures on the genitourinary system

VIII. Syphilis

A. Etiology--Treponema pallidum, a spirochete

B. Incidence

1. Greatly increasing in incidence
2. More prevalent in males than females
3. Majority of cases are in fifteen to twenty-five year age group

C. Diagnosis

1. Blood tests such as VDRL, Kline, Kahn, or Wasserman tests

   (NOTE: Blood test will not be positive until at least two weeks after infection. The test may be falsely positive due to certain drugs, other conditions, and following adequately treated syphilis.)

2. Smear of discharge from lesion

D. Transmission

1. Nearly always by sexual intercourse
2. By contact with an infected lesion
3. Congenital infection through the placenta

E. Symptoms--Syphilis is capable of infecting and destroying tissue in almost any organ of the body thus producing a wide variety of clinical symptoms

INFORMATION SHEET

F. Stages of untreated syphilis

1. Incubation period
    - a. Ten to sixty days
    - b. No symptoms or lesions
    - c. Blood infected with spirochete
2. Primary or early syphilis
    - a. Most infectious stage
    - b. Chancre or primary sore at the site where the treponema enters the body

      (NOTE: Possible sites of admission include the glans penis, cervix, labia, scrotum, anus, mouth, nipple, or any open lesion. Any genital or anal lesion should be suspect. Chancre disappears in three to eight weeks with or without treatment.)
    - c. Enlarged lymph nodes in the region of the chancre
3. Secondary
    - a. Highly infectious stage
    - b. Begins three to six weeks after initial infection
    - c. Disappears spontaneously with or without treatment

      (NOTE: Without treatment symptoms may disappear slowly and recur for as long as two years
    - d. May be asymptomatic or symptoms may include skin rash, wartlike lesions on mucous membranes, fever, headache, sore throat, loss of hair, pain in bones or joints, gastric disturbances, or inflammation of the eyes
4. Tertiary or latent
    - a. Potentially infectious stage
    - b. Symptoms may occur four to thirty years after initial infection
    - c. Half of those infected will have no more symptoms; the other half will be affected in various parts of the body
    - d. Cardiovascular system, central nervous system, or skeletal system are most often affected; symptoms will depend upon system involved

INFORMATION SHEET

G. Treatment

1. One injection of penicillin in the primary or secondary stage will eliminate spirochetes in 85 to 90 percent of the cases

2. More intensive treatment is required in the tertiary stage

3. Periodic medical checkups should be done for a period of months or years

4. Alternate drugs, tetracycline or erythromycin, may be used for patients with penicillin sensitivity

5. Proper treatment will kill the organism at any stage of the disease but damage is irreversible

H. Effects of syphilis

1. Untreated syphilis during pregnancy may cause miscarriage, stillbirth, or deformity or congenital syphilis in the infant

2. Syphilitic lesions may affect heart valves or blood vessels

3. Nervous system involvement may result in meningitis, paresis, or tabes dorsalis

   (NOTE: Paresis involves the cerebral cortex and causes personality changes. The person may become unable to concentrate; behave irresponsibly; and be irritable, depressed, exuberant, and/or slovenly about grooming. Tabes dorsalis or locomotor ataxia is a chronic and progressive degeneration of the spinal cord manifested by unsteadiness and incoordination of the arms and legs; disorders of vision; cutaneous anesthesia; sharp, stabbing pains in the lower extremities; and gastrointestinal disturbances. Eventually the person may be unable to walk and may have neurotrophic ulcers which are slow to heal and bladder incontinence.)

I. Nursing responsibilities

1. Nursing care will depend upon the system involved

2. Nursing personnel should encourage medical examination and treatment for persons who may be infected

3. Routine blood tests for syphilis should be a part of the annual physical examination

INFORMATION SHEET

IX. Types of surgery and abnormalities of the female reproductive system

A. Subtotal hysterectomy--Removal of the fundus of the uterus with the cervical stump remaining

B. Total hysterectomy--Removal of entire uterus including cervix, tubes, and ovaries; panhysterectomy

C. Conization--Excision of a cone of tissue

D. Oophorectomy--Removal of one ovary

E. Bilaterial oophorectomy--Removal of both ovaries

F. Salpingectomy--Removal of one fallopian tube

G. Bilateral salpingectomy--Removal of both fallopian tubes

H. Dilatation and curettage; D and C--Cervical os is dilated and the inside of the uterus is scraped with a curette

I. Anterior colporrhaphy--Repair of a cystocele

J. Posterior colporrhaphy--Repair of a rectocele

K. Perinorrhaphy--Repair of the perineum

L. Ureterovaginal fistula--Opening between the ureter and vagina

M. Vesicovaginal fistula--Opening between the bladder and the vagina

N. Rectovaginal fistula--Opening between the rectum and vagina

O. Simple mastectomy--Surgical removal of the breast

P. Radical mastectomy--Surgical removal of the entire breast and the underlying tissue including muscles and lymph nodes and vessels

X. Uterine displacements--Retroversion and retroflexion

(NOTE: Normally the fundus points toward the suprapubic region and the cervix points toward the lower end of the sacrum.)

A. Etiology

1. Congenital
2. Trauma
3. Childbearing

INFORMATION SHEET

B. Symptoms

1. Backache
2. Fatigue
3. Feeling of pelvic pressure
4. Leukorrea
5. Dysmenorrhea

C. Treatment

1. Pessary to hold uterus in place
2. Surgical repair

XI. Cystocele, rectocele, and prolapse

A. Etiology

1. Obstetrical trauma
2. General atrophy associated with aging

B. Symptoms

1. Pelvic pain
2. Backache
3. Fatigue
4. Pelvic pressure
5. Difficulty in emptying bladder or rectum
6. Dribbling of urine

C. Treatment-Surgical repair

XII. Benign tumors

A. Ovarian tumor or cyst

(NOTE: Cancer of the ovary occurs rarely and is usually detected only after metastasis has occurred. Treatment will be surgical removal, chemotherapy, or radiation therapy.)

INFORMATION SHEET

1. Symptoms
   a. Disturbance of menstruation
   b. Feeling of heaviness
   c. Slight bleeding
   d. Pain if tumor ruptures or twists
2. Treatment--Surgical removal

B. Uterine tumors--Myomata or fibroid tumors

1. Symptoms
   a. Menorrhagia
   b. Pain
   c. Constipation
   d. Backache
   e. Urinary retention
   f. Metrorrhagia
   g. Sterility
2. Treatment
   a. Conservative if patient is childbearing age
   b. Surgical removal of tumor or uterus

XIII. Cancer of the cervix

A. Incidence

1. Second greatest type of cancer in women
2. Most common between ages of thirty and fifty but can occur at any age
3. Nearly always curable if detected early

INFORMATION SHEET

B. Etiology

1. Possible relation to sexual activity
2. Increased incidence in presence of chronic infections and erosions of the cervix

C. Symptoms

1. Asymptomatic in early stage
2. Increase in leukorrhea which gradually becomes dark and foul smelling
3. Irregular vaginal bleeding or spotting between periods or after menopause
4. Pain in back and legs as cancer advances
5. Extreme emaciation and anemia in latter stages

D. Method of diagnosis--Papanicolaou test provides early detection

(NOTE: All females in their late teens and older should have annual PAP tests. It is possible to cure cancer of the cervix if it is detected early before it spreads.)

E. Treatment

1. Radiation therapy
2. Conization of the cervix
3. Surgical removal of the uterus
4. Chemotherapy

XIV. Cancer of the fundus of the uterus

A. Symptoms--Vaginal bleeding between periods or after menopause

B. Treatment

1. Radiation therapy
2. Hysterectomy
3. Chemotherapy

INFORMATION SHEET

XV. Nursing responsibilities for abdominal surgery of the female reproductive system

A. Preoperative care

1. Skin preparation of abdomen, pubis, and perineum
2. Enema and/or vaginal douche
3. Indwelling catheter

(NOTE: Additional preoperative care is the same as for other types of surgery.)

B. Postoperative care

1. Monitor indwelling catheter or observe for urination

   (NOTE: Because of the proximity of the bladder to the operative site there is increased possibility of difficulty in urination. If patient is unable to void, catheterization every eight hours may be necessary.)

2. Check dressings, both abdominal and perineal, for drainage or hemorrhage
3. Observe circulation in the lower extremities; avoid pressure on the backs of the knees

   (NOTE: Additional postoperative care is the same as for other types of surgery.)

XVI. Nursing responsibilities for surgical repair of the vagina or vaginal hysterectomy

A. Preoperative preparation

1. Liquid diet to help keep colon empty
2. Cathartic and enemas to empty colon and rectum
3. Cleansing vaginal douche
4. Surgical prep of the perineal region

(NOTE: Additional preoperative care is the same as for other types of surgery.)

INFORMATION SHEET

B. Postoperative care

1. Observe for hemorrhage

2. Avoid pressure on sutures

    a. Monitor function of retention catheter to prevent bladder distention

    b. Keep feces soft

    c. Place patient in low Fowler's position

3. Keep perineal area clean and dry

4. Provide perineal care using sterile equipment

5. Assist patient to roll out of bed rather than in sitting position when ambulation is permitted

6. Instruct patient to avoid lifting heavy objects or standing for long periods

    (NOTE: Additional postoperative care is the same as for other types of surgery.)

XVII. Diagnostic evaluation for diseases of the breast

A. Nursing responsibilities

1. Encourage breast self-examination

    (NOTE: All women should examine their breasts each month just after the menstrual period. Self-examination should continue monthly after menopause.)

2. Tell women's organizations about the breast self-examination film and how it is obtained

3. Arrange for showings of the film

4. Participate in discussion of the film; know the signs that may indicate breast cancer

5. Be aware of community resources where medical help and instruction is available

INFORMATION SHEET

B. Medical evaluation

1. Breast palpation is a part of the annual physical
2. Twice-a-year medical examination is recommended for women with a family history of cancer

C. Diagnostic tests

1. Mammography--X-ray of breast tissue without the use of a radiopaque medium
2. Thermography--Infrared photography of the breast tissue

   (NOTE: The temperature over the breast is portrayed photographically when an infrared scanner is passed over the skin. In the presence of a tumor a minute amount of heat is generated by the increased blood supply. The warmer area shows on the thermogram.)
3. Xerography--Special x-ray which portrays tissue giving an appearance of depth
4. Biopsy
   - a. Aspiration--Tissue is aspirated from the site and fixed on a slide for microscopic examination in the laboratory
   - b. Incisional--Tissue is excised and sent to a laboratory where it is prepared in a frozen section and examined microscopically

XVIII. Nonmalignant diseases of the breast

A. Acute mastitis

1. Incidence
   - a. Often occurs during lactation
   - b. May occur in male or female following mumps
2. Symptoms
   - a. Fever
   - b. Pain and tenderness in affected area

INFORMATION SHEET

3. Treatment
   a. Antibiotic medications
   b. Application of heat or cold
   c. Support for the breast
   d. Incision and drainage if an abscess forms

B. Chronic cystic mastitis
   1. Incidence--Occurs in women age thirty to fifty
   2. Symptoms
      a. Discomfort which may be worse during menses
      b. Small palpable nodules
      c. Shooting-type pain
   3. Treatment
      a. Diagnostic tests
      b. Conservative or surgical treatment as indicated

C. Fibroadenomata
   1. Incidence--Often found in young women
   2. Symptoms
      a. Firm, round, movable lump in breast
      b. No pain or tenderness
   3. Treatment
      a. Diagnostic tests
      b. Conservative or surgical removal as indicated

XIX. Cancer of the breast
   A. Incidence
      1. Occurs at any age
      2. Is the leading cause of cancer and death in women
      3. Is discovered by self-examination in ninety-five percent of the cases

INFORMATION SHEET

B. Predisposition

1. Family history of breast cancer
2. High socioeconomic levels
3. Late menopause
4. No children
5. No breast-fed children

C. Symptoms

1. Nontender lump, most frequently in upper, outer quadrant
2. Lump usually movable and isolated
3. No pain or discomfort in early stages
4. Orange peel skin or dimpling over lump
5. Asymmetry of breasts
6. Nipple retraction or bleeding
7. Breast becomes fixed to chest wall as condition advances
8. Nodular axillary masses

XX. Nursing responsibilities for surgery of the breast

A. Preparation for surgery

1. Provide opportunity for the patient to express her concerns and fears
2. Emphasize the successful program of rehabilitation and use of a prosthesis
3. Provide encouragement and reassurance
4. Prepare the skin over the affected side on the anterior, lateral, and posterior surfaces of the chest

(NOTE: Additional preoperative care is the same as for other types of surgery.)

INFORMATION SHEET

B. Postoperative care

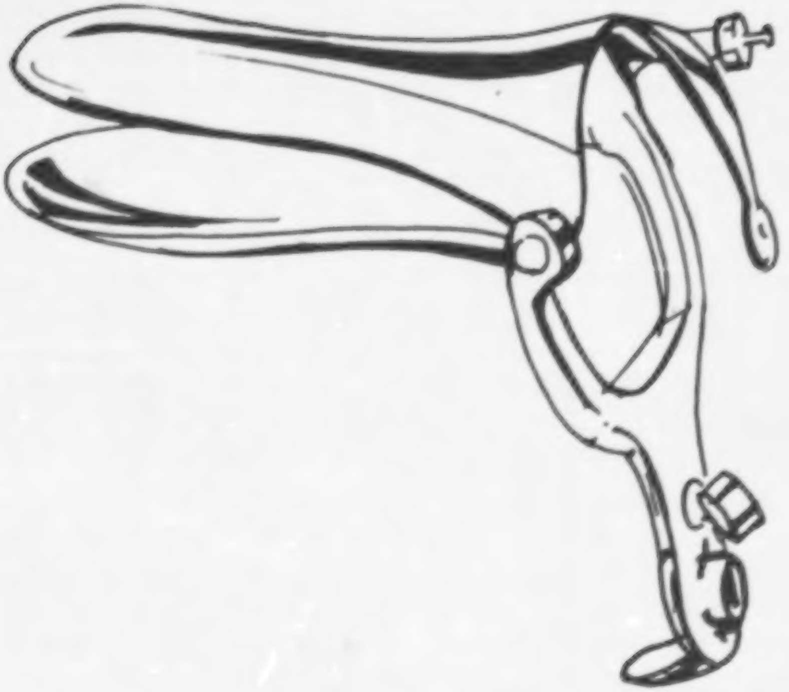
1. Observe for drainage
2. Position arm on affected side according to physician's instructions
3. Observe arm and hand for signs of circulatory disturbance
4. Assist at mealtime as needed

   (NOTE: Additional postoperative care is the same as for other types of surgery.)

C. Preparation for posthospitalization care

1. Encourage the patient to ask questions
2. Prepare the husband for his role of assisting
3. Assist the patient in exercise and assuming her personal care
   a. Patient should be instructed in exercise routine as necessary
   b. Exercise should not cause excessive pain
   c. Bilateral activity should be encouraged
   d. Proper posture should be maintained
4. Obtain physician's approval to arrange visits from a recovered post-mastectomy patient and/or representative from Reach to Recovery Program
5. Instruct in care of the wounds
   a. Wound will heal gradually
   b. Newly healed wound may have less sensation
   c. Surgical area should be cleansed and dried gently
   d. Signs of infection should be reported to the physician
   e. Incisional area can be massaged gently after healing with cocoa butter to improve circulation and elasticity of the skin
6. Prosthesis should be fitted properly when authorized by the physician
7. Treatment may include chemotherapy and/or radiation therapy

Vaginal Speculum



NURSING THE FEMALE PATIENT WITH DISEASES OF THE REPRODUCTIVE SYSTEM
UNIT II

TEST

1. Match the terms on the right to the correct definitions. (The answers for "a" through "o" are on this page.)

______a. Whitish, mucopurulent discharge from the female genital canal

______b. Study of the diseases of the reproductive system in women

______c. Instrument for dilating the vaginal canal to permit inspection

______d. Presence of endometrial tissue in abnormal locations, including the uterine wall, ovaries, or pelvic cavity

______e. Benign tumor containing both fibrous and glandular tissue

______f. Inflammation of the cervix

______g. Absence of menstruation

______h. Not transparent to x-ray

______i. Difficult or painful menstruation

______j. Uterine hemorrhage at any time other than during the menstrual flow

______k. Fibroma; benign tumor composed principally of fibrous connective tissue

______l. Tumor derived from muscle

______m. Inflammation of the endometrium

______n. Any mechanical device placed in the uterus to prevent implantation or growth of the embryo

______o. Excessive menstrual flow

1. Dysmenorrhea
2. Menorrhagia
3. Endometritis
4. Radiopaque
5. Leukorrhea
6. Myoma
7. Vaginal speculum
8. Fibroid tumor
9. Amenorrhea
10. Fibroadenoma
11. Gynecology
12. Intrauterine device; IUD
13. Metrorrhagia
14. Cervicitis
15. Endometriosis

(Answers for "p" through "z" are on this page.)

______p. Inflammation of the vagina

______q. Inflammation of the pelvic cavity involving the female reproductive organs

______r. Mechanical device inserted into the vagina for uterine support or contraception

______s. Fundus of the uterus is bent backward at an angle with the cervix in its usual position

______t. Formation of benign, nodular cysts in the breast

______u. Protrusion or herniation of the rectum into the vagina

______v. Inflammation of the breast

______w. Displacement of the uterus downward into the vaginal cavity

______x. Backward displacement of the uterus with the cervix pointing toward the symphysis pubis

______y. Exposure to rays such as infrared, ultraviolet, roemtgen, or gamma rays

______z. Herniation of the urinary bladder into the vagina

16. Chronic cystic mastitis
17. Cystocele
18. Retroflexion of the uterus
19. Vaginitis
20. Rectocele
21. Pessary
22. Prolapse of the uterus
23. Mastitis
24. Retroversion of the uterus
25. Pelvic inflammatory disease
26. Radiation or irradiation

2. Discuss the following factors concerning the gynecological examination.

a. Description

b. Nursing responsibilities

3. Describe the following diagnostic tests.

a. Papanicolaou test, PAP smear, or cytology test

b. Rubin test or tubal insufflati

c. Hysterosalpingogram

d. Culdoscopy

4. Discuss etiology and treatment of the following disturbances.

   a. Dysmenorrhea

      1) Etiology

      2) Treatment

   b. Amenorrhea

      1) Etiology

      2) Treatment

c. Menorrhagia

    1) Etiology

    2) Treatment

d. Metrorrhagia

    1) Etiology

    2) Treatment

e. Premenstrual tension

    1) Etiology

2) Treatment

5. Discuss etiology, symptoms, and treatment of cervicitis and vaginitis.

a. Cervicitis

1) Etiology

2) Symptoms

3) Treatment

b. Vaginitis

1) Etiology

2) Symptoms

3) Treatment

6. Discuss the following factors concerning pelvic inflammatory disease.

   a. Etiology and transmission

   b. Symptoms

   c. Treatment

   d. Complications

   e. Nursing responsibilities

7. List the following factors concerning gonorrhea.
   - a. Etiology
   - b. Incidence
   - c. Diagnosis
   - d. Transmission
   - e. Symptoms
   - f. Complications
   - g. Treatment
   - h. Nursing responsibilities

8. List the following factors concerning syphilis.
   - a. Etiology
   - b. Incidence

c. Diagnosis

d. Transmission

e. Symptoms

f. Stages of untreated syphilis

   1)

   2)

   3)

   4)

g. Treatment

h. Effects of syphilis

i. Nursing responsibilities

9. Match types of surgery and abnormalities of the female reproductive system to the correct definition.

_____a. Removal of the fundus of the uterus with the cervical stump remaining

_____b. Surgical removal of the entire breast and the underlying tissue including muscles and lymph nodes and vessels

_____c. Removal of the entire uterus including cervix, tubes, and ovaries; panhysterectomy

_____d. Opening between the rectum and vagina

_____e. Cervical os is dilated and the inside of the uterus is scraped with a curette

_____f. Repair of a cystocele

_____g. Removal of one fallopian tube

_____h. Removal of both ovaries

_____i. Repair of a rectocele

_____j. Opening between the ureter and vagina

_____k. Repair of the perineum

_____l. Surgical removal of the breast

_____m. Opening between the bladder and the vagina

_____n. Removal of both fallopian tubes

_____o. Removal of one ovary

_____p. Excision of a cone of tissue

1. Posterior colporrhaphy
2. Simple mastectomy
3. Ureterovaginal fistula
4. Subtotal hysterectomy
5. Bilateral oophorectomy
6. Total hysterectomy
7. Bilateral salpingectomy
8. Dilatation and curettage; D and C
9. Vesicovaginal fistula
10. Oophorectomy
11. Radical mastectomy
12. Salpingectomy
13. Conization
14. Perinorrhaphy
15. Rectovaginal fistula
16. Anterior colporrhaphy

10. List etiology, symptoms, and treatments for retroversion and/or retroflexion.

a. Etiology

b. Symptoms

c. Treatment

11. List etiology, symptoms, and treatment of cystocele, rectocele, and prolapse.
    a. Etiology
    b. Symptoms
    c. Treatment

12. List symptoms and treatment of benign ovarian and uterine tumors.
    a. Ovarian tumor or cyst
        1) Symptoms
        2) Treatment
    b. Uterine tumors--Myomata or fibroid tumors
        1) Symptoms
        2) Treatment

13. Discuss incidence, etiology, symptoms, methods of diagnosis, and treatment of cancer of the cervix.

    a. Incidence

    b. Etiology

    c. Symptoms

    d. Method of diagnosis

    e. Treatment

14. Discuss symptoms and treatment of cancer of the fundus of the uterus.

    a. Symptoms

    b. Treatment

15. Discuss preoperative and postoperative responsibilities for patients having abdominal surgery.

    a. Preoperative care

b. Postoperative care

16. Discuss preoperative and postoperative care for patients having surgical repair of the vagina or vaginal hysterectomy.

a. Preoperative care

b. Postoperative care

17. Discuss diagnostic evaluation for diseases of the breast including diagnostic tests.

a. Nursing responsibilities

b. Medical evaluation

c. Diagnostic tests

1) Mammography

2) Thermography

3) Xerography

4) Biopsy

18. Discuss incidence, symptoms, and treatment of nonmalignant diseases of the breast.

a. Acute mastitis

1) Incidence

2) Symptoms

3) Treatment

b. Chronic cystic mastitis

1) Incidence

2) Symptoms

3) Treatment

c. Fibroadenomata

1) Incidence

2) Symptoms

3) Treatment

19. Discuss incidence, predisposition, and symptoms of cancer of the breast.

a. Incidence

b. Predisposition

c. Symptoms

20. Discuss nursing responsibilities for patients having surgery of the breast.

a. Preparation for surgery

b. Postoperative care

c. Preparation for posthospitalization care

NURSING THE FEMALE PATIENT WITH DISEASES OF THE REPRODUCTIVE SYSTEM
UNIT II

ANSWERS TO TEST

1.

a.	5	h.	4	o.	2	u.	20
b.	11	i.	1	p.	19	v.	23
c.	7	j.	13	q.	25	w.	22
d.	15	k.	8	r.	21	x.	24
e.	10	l.	6	s.	18	y.	26
f.	14	m.	3	t.	16	z.	17
g.	9	n.	12				

2. Discussion should include:

   a. Description

      1) Inspection of the external genitalia for signs of inflammation, edema, bleeding, discharge, or local skin and epithelial changes

      2) Visualization of the vagina by insertion of a speculum into the vaginal cavity

      3) Palpation of the pelvic and lower abdominal organs through the vaginal and abdominal walls

      4) Digital examination of the rectum

   b. Nursing responsibilities

      1) Provide psychological support and aid patients, particularly young girls, to relax by explanation and reassurance

      2) Instruct the patient to avoid douching prior to the examination

      3) Encourage the patient to urinate and/or defecate immediately before the examination

      4) Assemble equipment

      5) Advise the patient which clothing to remove to facilitate the examination

6) Position and drape the patient

a) Physician will designate the proper position

b) Usual positions are lithotomy, Sims', or knee-chest

7) Focus the light and uncover the tray of equipment

8) Assist the physician with gloves and lubricant

9) Cleanse patient's vulva when examination is completed

10) Assist the patient to a comfortable position and allow to rest for a short time before dressing

11) Label and care for specimens

3. Description should include:

a. Papanicolaou--Cervical smear to aid in diagnosis of cervical cancer

b. Rubin test--Determination of the patency of the fallopian tubes by injecting carbon dioxide gas under pressure into the uterine cavity

c. Hysterosalpingogram

1) Radiopaque dye is injected into the uterus and the fallopian tubes

2) X-rays are taken to show the patency and location of the tubes and any pathology of the uterus or tubes

d. Culdoscopy

1) Test is performed under anesthesia

2) An endoscope is passed through the vaginal wall behind the cervix to visualize the internal organs and pelvic tissues

4. Discussion should include:

a. Dysmenorrhea

1) Etiology

a) Functional factors such as constipation, poor posture, insufficient exercise, or fatigue

b) Improper placement of a tampon

c) Fibroid tumors of the uterus

d) Chronic inflammation of the fallopian tubes

        - f) Displacement of the uterus
        - g) Endometritis
        - h) Endometriosis
    - 2) Treatment
        - a) Physical exercises including walking, sitting-up exercises, knee bends, and toe touching
        - b) Application of heat to lower abdomen
        - c) Hot sitz bath if flow is not profuse
        - d) Regulation of bowel movements
        - e) Simple analgesics
        - f) Medical consultation if pain is persistent or severe
- b. Amenorrhea
    - 1) Etiology
        - a) Nephritis
        - b) Tuberculosis
        - c) Endocrine disturbances
        - d) Malnutrition
        - e) Emotional stress
        - f) Malformations of reproductive system
    - 2) Treatment--Based on the underlying cause and determined on an individual basis
- c. Menorrhagia
    - 1) Etiology
        - a) Fibroid tumors of the uterus
        - b) Endocrine disturbance
        - c) Intrauterine device or IUD

- 2) Treatment
  - a) Endocrine therapy
  - b) Dilatation and curettage; D and C
- d. Metrorrhagia
  - 1) Etiology
    - a) Malignancy
    - b) Lesions of the cervix or uterus
    - c) Oral contraceptives
  - 2) Treatment--Based on the cause and determined on an individual basis
- e. Premenstrual tension
  - 1) Etiology--Disturbance of the electrolyte balance
  - 2) Treatment
    - a) Salt-free diet during premenstrual cycle
    - b) Medication to increase the excretion of sodium ions
    - c) Analgesics

5. Discussion should include:
   - a. Cervicitis
     - 1) Etiology
       - a) Staphylococci or streptococci infection
       - b) Gonorrhea
       - c) Cancer
       - d) Cervical erosion
     - 2) Symptoms
       - a) Leukorrhea
       - b) Bleeding
       - c) Pain with sexual intercourse

   - 3) Treatment
      - a) Douches
      - b) Cauterization of the cervix
      - c) Antibiotics
- b. Vaginitis
   - 1) Etiology
      - a) Trichomonas vaginalis
      - b) Monilia albicans
      - c) Other pathogens
      - d) Side effect of drug therapy
   - 2) Symptoms
      - a) Leukorrhea, which may be profuse and odorous
      - b) Perineal itching
      - c) Burning of the urethra
      - d) Pelvic pain occasionally
   - 3) Treatment
      - a) Insertion of vaginal jelly or suppositories
      - b) Vaginal douches
      - c) Application of ointment to affected area
      - d) Oral antifungal medications such as Flagyl and Candeptin

6. Discussion should include:
   - a. Etiology and transmission
      - 1) Tubercle bacillus enters the pelvic organs through the bloodstream
      - 2) Gonococci enter following sexual intercourse
      - 3) Streptococci or staphylococci enter through the bloodstream

b. Symptoms

  1) Foul-smelling vaginal discharge
  2) Backache
  3) Pelvic pain
  4) Fever
  5) Nausea
  6) Vomiting
  7) Dysmenorrhea

c. Treatment

  1) Antibiotics
  2) Fowler's position to encourage pelvic drainage
  3) Sitz baths to relieve pain
  4) Medicated douches
  5) Heat to abdomen
  6) No sexual intercourse while infection is present
  7) Salpingectomy if condition does not respond to conservative treatment

d. Complications

  1) Chronic infection
  2) Abscess in pelvic cavity
  3) Infection in male partner
  4) Formation of adhesions in fallopian tubes
  5) Sterility

e. Nursing responsibilities

  1) Wash hands well
  2) Dispose of soiled pads in a safe manner to avoid spread to self or other patients

3) Maintain isolation precautions and wear gloves when giving perineal care if the infection is gonorrheal

4) Give perineal care after urination and pad changes when discharge is profuse

7. a. Etiology--Gonococcus

b. Incidence

1) Most common venereal disease

2) Number one communicable disease in the United States

3) More widespread since the organisms are becoming resistant to penicillin

c. Diagnosis--Smear test of discharge

d. Transmission--Usually through sexual intercourse

e. Symptoms

1) Asymptomatic in some females

2) Yellowish, purulent discharge from vagina

f. Complications

1) Involvement of uterus and fallopian tubes

2) Sterility

3) Arthritis

4) Heart disease

g. Treatment

1) One dose of penicillin cures in ninety-five percent of cases receiving early treatment

2) Delayed treatment may permit further spread of the disease to other portions of the infected person and/or to other people

h. Nursing responsibilities

1) Wash hands thoroughly after caring for the infected patient

2) Maintain isolation technique particularly of bedpan or toilet

3) Avoid touching the eyes while caring for the infected person

4) Wear gloves when performing procedures on the genitourinary system

8. a. Etiology--Treponema pallidum, a spirochete

   b. Incidence

      1) Greatly increasing in incidence

      2) More prevalent in males than females

      3) Majority of cases are in fifteen to twenty-five year age group

   c. Diagnosis

      1) Blood tests such as VDRL, Kline, Kahn, or Wasserman tests

      2) Smear of discharge from lesion

   d. Transmission

      1) Nearly always by sexual intercourse

      2) By contact with an infected lesion

      3) Congenital infection through the placenta

   e. Symptoms--Syphilis is capable of infecting and destroying tissue in almost any organ of the body thus producing a wide variety of clinical symptoms

   f. Stages of untreated syphilis

      1) Incubation period

         a) Ten to sixty days

         b) No symptoms or lesions

         c) Blood infected with spirochete

      2) Primary or early syphilis

         a) Most infectious stage

         b) Chancre or primary sore at the site where the treponema enters the body

         c) Enlarged lymph nodes in the region of the chancre

      3) Secondary

         a) Highly infectious stage

         b) Begins three to six weeks after initial infection

- c) Disappears spontaneously with or without treatment
- d) May be asymptomatic or symptoms may include skin rash, wartlike lesions on mucous membranes, fever, headache, sore throat, loss of hair, pain in bones or joints, gastric disturbances, or inflammation of the eyes

4) Tertiary or latent

- a) Potentially infectious stage
- b) Symptoms may occur four to thirty years after initial infection
- c) Half of those infected will have no more symptoms; the other half will be affected in various parts of the body
- d) Cardiovascular system, central nervous system, or skeletal system are most often affected; symptoms will depend upon system involved

g. Treatment

- 1) One injection of penicillin in the primary or secondary stage will eliminate spirochetes in 85 to 90 percent of the cases
- 2) More intensive treatment is required in the tertiary stage
- 3) Periodic medical checkups should be done for a period of months or years
- 4) Alternate drugs, tetracycline or erythromycin, may be used for patients with penicillin sensitivity
- 5) Proper treatment will kill the organism at any stage of the disease but damage is irreversible

h. Effects of syphilis

- 1) Untreated syphilis during pregnancy may cause miscarriage, stillbirth, or deformity or congenital syphilis in the infant
- 2) Syphilitic lesions may affect heart valves or blood vessels
- 3) Nervous system involvement may result in meningitis, paresis, or tabes dorsalis

i. Nursing responsibilities

- 1) Nursing care will depend upon the system involved
- 2) Nursing personnel should encourage medical examination and treatment for persons who may be infected
- 3) Routine blood tests for syphilis should be a part of the annual physical examination

9. a. 4
   b. 11
   c. 6
   d. 15
   e. 8
   f. 16
   g. 12
   h. 5
   i. 1
   j. 3
   k. 14
   l. 2
   m. 9
   n. 7
   o. 10
   p. 13

10. a. Etiology
    1) Congenital
    2) Trauma
    3) Childbearing
  b. Symptoms
    1) Backache
    2) Fatigue
    3) Feeling of pelvic pressure
    4) Leukorrea
    5) Dysmenorrhea
  c. Treatment
    1) Pessary to hold uterus in place
    2) Surgical repair

11. a. Etiology
    1) Obstetrical trauma
    2) General atrophy associated with aging
  b. Symptoms
    1) Pelvic pain
    2) Backache
    3) Fatigue
    4) Pelvic pressure
    5) Difficulty in emptying bladder or rectum
    6) Dribbling of urine
  c. Treatment--Surgical repair

12. a. Ovarian tumor or cyst
    1) Symptoms
        a) Disturbance of menstruation
        b) Feeling of heaviness
        c) Slight bleeding
        d) Pain if tumor ruptures or twists
    2) Treatment--Surgical removal

    b. Uterine tumors
    1) Symptoms
        a) Menorrhagia
        b) Pain
        c) Constipation
        d) Backache
        e) Urinary retention
        f) Metrorrhagia
        g) Sterility
    2) Treatment
        a) Conservative if patient is childbearing age
        b) Surgical removal of tumor or uterus

13. Discussion should include:
    a. Incidence
        1) Second greatest type of cancer in women
        2) Most common between ages of thirty and fifty but can occur at any age
        3) Nearly always curable if detected early

b. Etiology
  1) Possible relation to sexual activity
  2) Increased incidence in presence of chronic infections and erosions of the cervix

c. Symptoms
  1) Asymptomatic in early stage
  2) Increase in leukorrhea which gradually becomes dark and foul smelling
  3) Irregular vaginal bleeding or spotting between periods or after menopause
  4) Pain in back and legs as cancer advances
  5) Extreme emaciation and anemia in latter stages

d. Method of diagnosis--Papanicolaou test provides early detection

e. Treatment
  1) Radiation therapy
  2) Conization of the cervix
  3) Surgical removal of the uterus
  4) Chemotherapy

14. Discussion should include:

a. Symptoms--Vaginal bleeding between periods or after menopause

b. Treatment
  1) Radiation therapy
  2) Hysterectomy
  3) Chemotherapy

15. Discussion should include:

a. Preoperative care
  1) Skin preparation of abdomen, pubis, and perineum
  2) Enema and/or vaginal douche
  3) Indwelling catheter

b. Postoperative care

  1) Monitor indwelling catheter or observe for urination

  2) Check dressings, both abdominal and perineal, for drainage or hemorrhage

  3) Observe circulation in the lower extremities; avoid pressure on the backs of the knees

16. Discussion should include:

a. Preoperative preparation

  1) Liquid diet to help keep colon empty

  2) Cathartic and enemas to empty colon and rectum

  3) Cleansing vaginal douche

  4) Surgical prep of the perineal region

b. Postoperative care

  1) Observe for hemorrhage

  2) Avoid pressure on sutures

    a) Monitor function of retention catheter to prevent bladder distention

    b) Keep feces soft

    c) Place patient in low Fowler's position

  3) Keep perineal area clean and dry

  4) Provide perineal care using sterile equipment

  5) Assist patient to roll out of bed rather than in sitting position when ambulation is permitted

  6) Instruct patient to avoid lifting heavy objects or standing for long periods

17. Discussion should include:

a. Nursing responsibilities

  1) Encourage breast self-examination

  2) Tell women's organizations about the breast self-examination film and how it is obtained

3) Arrange for showings of the film

4) Participate in discussion of the film; know the signs that may indicate breast cancer

5) Be aware of community resources where medical help and instruction is available

b. Medical evaluation

1) Breast palpation is a part of the annual physical

2) Twice-a-year medical examination is recommended for women with a family history of cancer

c. Diagnostic tests

1) Mammography--X-ray of breast tissue without the use of radiopaque medium

2) Thermography--Infrared photography of the breast tissue

3) Xerography--Special x-ray which portrays tissue giving an appearance of depth

4) Biopsy

a) Aspiration--Tissue is aspirated from the site and fixed on a slide for microscopic examination in the laboratory

b) Incisional--Tissue is excised and sent to a laboratory where it is prepared in a frozen section and examined microscopically

18. Discussion should include:

a. Acute mastitis

1) Incidence

a) Often occurs during lactation

b) May occur in male or female following mumps

2) Symptoms

a) Fever

b) Pain and tenderness in affected area

3) Treatment
   a) Antibiotic medications
   b) Application of heat or cold
   c) Support for the breast
   d) Incision and drainage if an abscess forms

b. Chronic cystic mastitis
   1) Incidence--Occurs in women age thirty to fifty
   2) Symptoms
      a) Discomfort which may be worse during menses
      b) Small palpable nodules
      c) Shooting-type pain
   3) Treatment
      a) Diagnostic tests
      b) Conservative or surgical treatment as indicated

c. Fibroadenomata
   1) Incidence--Often found in young women
   2) Symptoms
      a) Firm, round, movable lump in breast
      b) No pain or tenderness
   3) Treatment
      a) Diagnostic tests
      b) Conservative or surgical removal as indicated

19. Discussion should include:

a. Incidence
   1) Occurs at any age
   2) Is the leading cause of cancer and death in women
   3) Is discovered by self-examination in ninety-five percent of the cases

b. Predisposition

   1) Family history of breast cancer

   2) High socioeconomic levels

   3) Late menopause

   4) No children

   5) No breast-fed children

c. Symptoms

   1) Nontender lump, most frequently in upper, outer quadrant

   2) Lump usually movable and isolated

   3) No pain or discomfort in early stages

   4) Orange peel skin or dimpling over lump

   5) Asymmetry of breasts

   6) Nipple retraction or bleeding

   7) Breast becomes fixed to chest wall as condition advances

   8) Nodular axillary masses

20. Discussion should include:

a. Preparation for surgery

   1) Provide opportunity for the patient to express her concerns and fears

   2) Emphasize the successful program of rehabilitation and use of a prosthesis

   3) Provide encouragement and reassurance

   4) Prepare the skin over the affected side on the anterior, lateral, and posterior surfaces of the chest

b. Postoperative care

   1) Observe for drainage

   2) Position arm on affected side according to physician's instructions

   3) Observe arm and hand for signs of circulatory disturbance

   4) Assist at mealtime as needed

c. Preparation for posthospitalization care

1) Encourage the patient to ask questions

2) Prepare the husband for his role of assisting

3) Assist the patient in exercise and assuming her personal care

    a) Patient should be instructed in exercise routine as necessary

    b) Exercise should not cause excessive pain

    c) Bilateral activity should be encouraged

    d) Proper posture should be maintained

4) Obtain physician's approval to arrange visits from a recovered post-mastectomy patient and/or representative from Reach to Recovery Program

5) Instruct in care of the wounds

    a) Wound will heal gradually

    b) Newly healed wound may have less sensation

    c) Surgical area should be cleansed and dried gently

    d) Signs of infection should be reported to the physician

    e) Incisional area can be massaged gently after healing with cocoa butter to improve circulation and elasticity of the skin

6) Prosthesis should be fitted properly when authorized by the physician

7) Treatment may include chemotherapy and/or radiation therapy

CARING FOR THE PATIENT WITH DISEASES OF THE RESPIRATORY SYSTEM
UNIT III

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to discuss and/or describe infectious and noninfectious conditions affecting the respiratory system. The student should be able to describe treatment and nursing responsibilities for these various conditions. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with respiratory diseases to the correct definitions.
2. List common symptoms of respiratory distress.
3. Discuss psychological care of patients with respiratory dysfunction.
4. Describe diagnostic tests and procedures.
    a. Blood studies
    b. Sputum examination
    c. Pulmonary function tests or Tidal Volume Determination
    d. Throat culture
    e. Gastric washing
    f. X-rays and fluoroscopy
    g. Mantoux test
    h. Tine test
5. Discuss disorders of the nose which may require surgery.
    a. Description and treatment of deviated septum
    b. Description and treatment of nasal polyps
    c. Description and treatment of deformities of the nose
6. Describe postoperative nursing responsibilities for nasal surgery.

7. Discuss infectious conditions of the upper respiratory system.
   a. Etiology and symptoms of acute coryza or the common cold
   b. Etiology and symptoms of acute pharyngitis
   c. Etiology and symptoms of acute laryngitis
   d. Etiology and symptoms of tonsillitis
   e. Etiology, complications, and symptoms of acute or chronic sinusitis
   f. Etiology, symptoms, and complications of influenza
8. Describe treatment and nursing responsibilities in caring for patients with upper respiratory infections.
9. Discuss infectious conditions involving the lungs.
   a. Etiology, symptoms, treatment, and nursing responsibilities of acute bronchitis
   b. Etiology, symptoms, treatment, and nursing responsibilities of pneumonia
   c. Etiology, symptoms, treatment, and nursing responsibilities of pleurisy and empyema
   d. Etiology, incidence, symptoms, diagnostic procedures, treatment, and nursing responsibilities of tuberculosis
10. Discuss allergic conditions affecting the respiratory system.
    a. Etiology, symptoms, and treatment of allergic rhinitis or hay fever
    b. Etiology, symptoms, treatment, nursing responsibilities, and medications for bronchial asthma
11. Discuss noninfectious respiratory conditions.
    a. Physiology, etiology, symptoms, and treatment and nursing responsibilities of epistaxis
    b. Physiology, etiology, symptoms, treatment, and nursing responsibilities of bronchiectasis
    c. Physiology, etiology, symptoms, treatment, and nursing responsibilities of pulmonary emphysema
    d. Physiology, etiology, symptoms, treatment, and nursing responsibilities of pulmonary embolism
    e. Physiology, etiology, symptoms, treatment, and nursing responsibilities of pulmonary edema
    f. Physiology, etiology, symptoms, treatment, and nursing responsibilities of atelactasis and pneumothorax

12. Discuss the use of closed chest or water-seal drainage.
13. Discuss incidence, symptoms, treatment, prognosis, and preoperative and postoperative nursing responsibilities for cancer of the lungs.
14. Describe chest wounds and nursing responsibilities for them.
15. Discuss incidence, symptoms, treatment, preoperative preparation, and postoperative nursing responsibilities for cancer of the larynx.
16. Describe the trachesotomy tube, reasons for inserting one, and nursing care for the patient who has one.

CARING FOR THE PATIENT WITH DISEASES OF THE RESPIRATORY SYSTEM
UNIT III

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objectives.

   B. Provide students with information sheet.

   C. Discuss terminal and specific objectives.

   D. Discuss information sheet.

   E. Show the equipment used in the treatment of respiratory conditions.

   F. Have respiratory therapist discuss ways nursing personnel can assist with therapy.

   G. Arrange for a representative from the American Lung Association to speak to the class.

   (NOTE: In Oklahoma contact the Oklahoma Lung Association, Box 53303, Oklahoma City 73105 or 808 South Peoria, Tulsa 74120.)

   H. Give test.

II. Student:

   A. Read objectives.

   B. Study information sheet.

   C. Participate in discussion.

   D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Transparency masters

      1. TM 1--Parts of the Tracheostomy Set

      2. TM 2--Tracheostomy Tube with Dressing

D. Test

E. Answers to test

II. References:

A. Brunner, Lillian S. *The Lippincott Manual of Nursing Practice.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1974.

B. Johnston, Dorothy F. *Total Patient Care.* St. Louis, Missouri: The C. V. Mosby Company, 1972.

C. Smith, Genevieve E. *A Teaching Plan for the Practical Nursing Curriculum.* New Brunswick, New Jersey: Rutgers University, 1973.

D. Sutton, Audrey L. *Bedside Nursing Techniques.* Philadelphia, Pennsylvania: W. B. Saunders Company, 1969.

E. Thompson, Ella M., and Caroline B. Rosdahl. *Textbook of Basic Nursing.* Philadelphia, Pennsylvania: J. B. Lippincott Company, 1973.

F. Wood, Lucile A. *Nursing Skills for Allied Health Services,* vol. 3. Philadelphia, Pennsylvania: W. B. Saunders Company, 1975.

III. Other materials:

A. Films

1. "The Special Universe of Walter Krolik." The American Journal of Nursing Company.

2. "How to Catch a Cold." American Medical Association Film Library c/o Association-Sterling Films.

3. "Smoking: A New Focus."

(NOTE: The above films are available to Oklahoma instructors from the Oklahoma State Department of Health.)

4. "Another Voice." National Audiovisual Center.

B. Filmstrips

1. "Lung, Cancer of the - Symptoms and Diagnosis." Trainex Corporation.

2. "Lung, Cancer of the - The Surgical Patient." Trainex Corporation.

3. "The Pathophysiology of Emphysema." Trainex Corporation.

4. "Care of the Patient with Emphysema." Trainex Corporation.

5. "What is Emphysema?" Trainex Corporation.
6. "The Best Medicine for Emphysema is You." Trainex Corporation.
7. "Thoracentesis and Abdominal Paracentesis." Trainex Corporation.
8. "Introduction to Tracheostomy Care." Trainex Corporation.
9. "Tracheostomy Care - The Cuffed Tube." Trainex Corporation.
10. "Tracheostomy Care." Trainex Corporation.
11. "Care of the Patient with Water-Sealed Drainage." Trainex Corporation.

CARING FOR THE PATIENT WITH DISEASES OF THE RESPIRATORY SYSTEM
UNIT III

INFORMATION SHEET

I. Terms and definitions

   A. Pharyngitis--Inflammation of the pharynx

   B. Laryngitis--Inflammation of the larynx

   C. Sinusitis--Inflammation of one or more sinuses

   D. Influenza--Acute respiratory infection of specific viral etiology, usually epidemic in nature

   E. Encephalitis--Inflammation of the brain

   F. Epistaxis--Nosebleed

   G. Blood dyscrasia--Abnormality of the blood

   H. Hemoptysis--Spitting of blood or blood-stained sputum from the lungs, trachea, or bronchi

   I. Palliative--Having a relieving or soothing, but not curative, action

   J. Expectorant--Medicine that promotes or modifies the secretions from the lungs

   K. Ischemia--Diminished blood supply to an area due to an obstruction of the circulation

   L. Recanalization--Provide with another channel or route of blood supply

   M. Pneumothorax--Presence of air or gas in the pleural cavity

   N. Thoracentesis--Aspiration of the chest cavity for removal of fluid

   O. Asthma--Disease characterized by difficulty in breathing due to spasmodic contractions of the bronchial tubes

   P. Pneumonia--Inflammation of the lungs associated with exudate in the lumen of the alveoli

   Q. Pleurisy--Inflammation of the pleura

   R. Empyema--Presence of pus in a cavity, hollow organ, or body space

INFORMATION SHEET

S. Dry pleurisy--Pleurisy with only a small amount of fluid

T. Pleurisy with effusion--Pleurisy with a large amount of fluid between the two layers of the pleura

U. Bronchoscopy--Examination of the lungs with a special instrument

V. Segmental resection--Removal of a small portion of lung tissue

W. Lobectomy--Removal of an entire lobe of a lung

X. Pneumonectomy--Removal of an entire lung

Y. Thoracotomy--Incision of the thoracic wall

Z. Tracheotomy--Incision into the trachea

AA. Tracheostomy--Formation of an opening into the trachea with the edges of the opening sutured to an opening in the skin

BB. Laryngectomy--Surgical removal of larynx

CC. Radical neck dissection--Surgical removal of larynx, surrounding tissue, and lymph nodes

II. Common symptoms of respiratory distress

(NOTE: Symptoms will depend upon the degree of deficiency. Not all symptoms will appear in each patient.)

A. Increase in respiratory or pulse rates

B. Sighing and yawning

C. Abnormal breathing sounds

D. Irregular respirations

E. Restlessness or excitement

F. Headache

G. Nausea and vomiting

H. Anorexia

I. Decrease in blood pressure

J. Cyanosis

K. Muscle twitching

INFORMATION SHEET

III. Psychological care

A. Difficulty in breathing is a frightening experience

B. A calm, quiet atmosphere should be maintained

C. Apprehensive relatives can transmit their anxieties to the patient

D. Nursing personnel must stay calm to plan and organize patient care and perform the skills necessary to relieve the symptoms

E. Procedures should be explained to the patient and family using simple terms

F. Changing the patient's position or elevating the head may ease breathing

G. Smoking should not be permitted in the room

H. The number and length of visits of relatives and friends should be limited

IV. Diagnostic tests and procedures

A. Blood studies

1. Blood tests include RBC, WBC, Hgb, and blood gases determination

2. Marked decrease of RBC or Hgb may indicate that an inadequate amount of oxygen is reaching the tissues

B. Sputum examination

1. Sputum is examined by laboratory personnel but the collection of sputum is a nursing responsibility

2. Sputum must be collected in the correct manner to be of diagnostic value

3. Amount, color, and consistency of sputum should be noted and recorded

(NOTE: The appearance of sputum is affected by the respiratory disease. In infectious diseases such as pneumonia, the sputum is purulent. In lung abscess the sputum is purulent and may have an unpleasant odor. In pulmonary edema the sputum is pink and frothy. In tuberculosis and carcinoma the sputum may be bright red from blood.)

4. Papanicolaou test of sputum may be used to detect cancer

INFORMATION SHEET

C. Pulmonary function tests or Tidal Volume Determination

1. Machines such as the spirometer or the vitalograph are used to measure the amount of air taken in and out in one breath

2. Testing aids in determining the patient's general respiratory status as well as the effect of treatment or medication on respiratory function

3. Tests are carried out by laboratory personnel, but nursing personnel should explain the purpose of the test and reassure the patient

D. Throat culture

1. A culture is made from the mucus or secretions from the back of the throat

2. Drug sensitivity tests are performed on the culture to determine which drug will be most effective in treatment

   (NOTE: Many organisms cause the same symptoms in the throat but not all organisms are effectively killed by the same drug.)

E. Gastric washing

1. Gastric washings may be done to detect tuberculosis or to identify cancer cells

2. Patients who are unable to cough up sputum or who have little sputum may swallow it

3. Gastric contents are remove through a nasogastric tube by gentle aspiration and are cultured

4. Patient is NPO prior to the test

F. X-rays and fluoroscopy

1. Many hospitals require routine chest x-rays on all patients

2. Chest x-ray can be taken without removing the hospital gown but all other clothing should be removed

3. Pins or other metal fasteners should not be used

4. Nursing personnel explain the purpose of the procedure to the patient and prepare the patient for the examination

INFORMATION SHEET

G. Mantoux test

  1. A small amount of tuberculin serum, about 0.1 cc, is injected intradermally forming a wheal

  2. Two days later the injection site is examined for edema or reddened area

  3. A positive reaction indicates the person has been exposed to tuberculosis and should have a chest x-ray

  4. Once the Mantoux test is positive, it almost always remains so for life

H. Tine test

  1. Tuberculin adhering to metal tines is inoculated by pressure into the skin

  2. The inoculated area is examined two to three days later for presence of a reddened area at the site

     (NOTE: If the diameter of the reddened area is less than 4 mm it is negative, 5 to 9 mm is doubtful, and 10 mm or more is positive.)

V. Disorders of the nose which may require surgery

A. Deviated septum

  1. Description

     a. Deformity of the septum that interferes with the drainage of one nostril or the sinuses

     b. Usually caused by injury or fracture

  2. Treatment--Submucous resection

B. Nasal polyps

  1. Description

     a. Are tumors which resemble small bunches of grapes attached to the mucous membrane of the nose

     b. May cause obstruction

     c. Tend to recur

     d. May be due to prolonged sinusitis

  2. Treatment--Surgical removal

INFORMATION SHEET

C. Deformities of the nose

1. Description--Any deviation from the normal in size or shape either congenital or acquired through fracture, laceration, freezing, or similar injury

2. Treatment

    a. Rhinoplasty--Plastic surgery of the nose

    b. Rhinorrhaphy--Plastic reduction in the size of the nose

VI. Postoperative nursing responsibilities for nasal surgery

(NOTE: Following the surgical procedure the nasal cavity may be packed with gauze. The packing is usually secured with strings which emerge from the nostrils and are fastened to the cheek with tape. When packing is used, the patient will have to breathe through the mouth.)

A. Observe for hemorrhage

1. External

    a. On dressings

    b. From the nostrils

2. Internal due to swallowing blood

    a. Nausea

    b. Coffee-grounds or dark emesis

3. Expectorating bright red blood

B. Elevate the head of the bed to facilitate breathing and swallowing

C. Check nasal packing frequently for placement

D. Give mouth care frequently

E. Observe for signs of choking or difficulty in swallowing

F. Provide ice chips, if permitted, to keep mouth moist

VII. Infectious conditions of the upper respiratory system

A. Acute coryza or common cold

1. Etiology--One or several viruses

INFORMATION SHEET

2. Symptoms--Usually last about one week
    a. Chilly feeling
    b. Sneezing
    c. Dry, congested nasal membranes
    d. Slight throat irritation
    e. Thin serous discharge

(NOTE: The following conditions may occur as the initial infection or as complications of acute coryza.)

B. Acute pharyngitis
    1. Etiology
        a. Viruses
        b. Bacteria such as hemolytic streptococcus, Staphylococcus aureus, or Hemophilus influenzae
    2. Symptoms
        a. Inflamed, red throat
        b. Tenderness in tonsils and cervical lymph nodes
        c. Dry cough

C. Acute laryngitis
    1. Etiology
        a. Pathogens
        b. Secondary to other upper respiratory conditions
    2. Symptoms
        a. Hoarseness
        b. Loss of voice
        c. Cough

INFORMATION SHEET

D. Tonsillitis

  1. Etiology

    a. Streptococci

    b. Staphylococci

  2. Symptoms

    a. Sore, painful throat

    b. Difficulty in swallowing

    c. Generalized aching

    d. Chills

    e. Fever

    f. Nausea

    g. Vomiting

E. Sinusitis, acute or chronic

  1. Etiology

    a. Obstructions of the nose

    b. Complication of acute coryza, influenza, or pneumonia

    c. Allergies

  2. Complications

    a. Middle ear infection

    b. Meningitis

    c. Bronchiectasis

    d. Asthma

  3. Symptoms

    a. Pain over affected sinus

      Examples: Maxillary sinus--Pain in cheeks
      Frontal sinus--Pain above eyes

INFORMATION SHEET

  - b. Low grade fever
  - c. Fatigue
  - d. Poor appetite
  - e. Purulent nasal discharge
  - f. Throat irritation

F. Influenza

  1. Etiology--Virus strains, type A, B, or C
  2. Symptoms
     - a. Sudden onset
     - b. Muscular pains
     - c. Fever for two or three days
     - d. Headache
     - e. Sensitivity to light
     - f. Chills
     - g. Nausea and vomiting
     - h. Diarrhea
     - i. Sneezing and nasal discharge
     - j. Cough and sore throat
  3. Complications
     - a. Susceptibility to lung disorders
     - b. Chronic sinusitis
     - c. Chronic bronchitis
     - d. Ear infections
     - e. Heart disease
     - f. Encephalitis
     - g. Harmful effects on pregnancy

INFORMATION SHEET

VIII. Caring for patients with upper respiratory infections

A. Treatment

1. Bed rest if fever is present
2. Limiting contact to avoid spreading the infection to others
3. Antibiotics for bacterial infections

   (NOTE: Antibiotics are not effective on the cold virus.)

4. Symptomatic relief using antipyretics, analgesics, antihistamines, hot saline gargles, cough mixtures, or mild sedatives
5. Increased humidity with vaporizers

B. Nursing responsibilities

1. Keep patient at bed rest
2. Observe aseptic techniques, particularly handwashing and safe disposal of contaminated tissues
3. Encourage fluid intake
4. Position patient for ease of breathing, usually low Fowler's position
5. Provide adequate cover but avoid overheating
6. Observe for possible complications

IX. Infectious conditions involving the lungs

A. Acute bronchitis

1. Etiology
   - a. Secondary to upper respiratory infection
   - b. Exposure to chemical agents
   - c. Complication of measles
2. Symptoms
   - a. Hoarseness
   - b. Dry, painful cough that gradually becomes productive

INFORMATION SHEET

        c. Slight temperature elevation
        d. Muscular aching
        e. Headache

    3. Treatment
        a. Symptomatic relief
        b. Prevention of complications
        c. Change of occupation if indicated
        d. General care to promote health
        e. Limit amount of smoking

    4. Nursing responsibilities
        a. Maintain bed rest while temperature is elevated
        b. Increase humidity with vaporizer
        c. Check vital signs regularly
        d. Administer sedatives or expectorants as prescribed
        e. Observe for signs of complications

B. Pneumonia

    1. Etiology
        a. Bacterial--Pneumoccus or streptococcus
        b. Viral--Virus
        c. Hypostatic--Permitting patient to remain in one position too long
        d. Aspiration--From fluid or other substances which get into the lungs

    2. Symptoms of bacterial pneumonia

        (NOTE: Symptoms vary with the individual. The onset of bacterial, viral, and aspiration pneumonia is usually sudden, while the onset of hypostatic pneumonia may be gradual.)

        a. Severe, sharp pain in chest
        b. Chill followed by high fever

INFORMATION SHEET

c. Rapid pulse and respirations

d. Painful, constant cough

e. Clear or blood-tinged sputum which develops a characteristic rusty appearance within 48 hours

f. Orthopnea

g. Leukocytosis with the number of white blood cells from 20,000 to 30,000

h. Restlessness

i. Possible mental changes such as anxiety or delirium

3. Symptoms of viral pneumonia

(NOTE: Viral pneumonia may be referred to as *walking pneumonia* or *atypical pneumonia.*)

a. Chilling sensation or chills

b. Irregular temperature elevation for several days

c. Profuse perspiration

d. Aching

e. Painful cough

f. Mucopurulent sputum; may be blood-tinged

g. Normal white count

4. Treatment

a. Blood culture and/or sputum tests to determine causative organism

b. Sensitivity tests on cultures to determine effective antibiotics

c. Chest x-rays to determine lung involvement

d. Analgesics such as meperidine or anileridine to relieve pain

e. Increased humidity with vaporizers

f. Administration of oxygen

g. Codeine or cough syrups to alleviate coughing

INFORMATION SHEET

h. Antipyretics such as aspirin

i. Antibiotics may include penicillin, streptomycin, tetracycline, chloramphenicol, erythromycin, or sulfonamides

5. Nursing responsibilities

   a. Plan nursing care to provide adequate rest and quiet

   b. Monitor vital signs regularly; report increase in pulse or increasing dyspnea

   c. Position patient in Fowler's position or orthopneic position to ease breathing

   d. Measure intake and output

   e. Change bed linens as needed to keep patient clean and dry

   f. Give mouth care frequently

   g. Encourage patient to cough and expectorate mucus; splint chest during coughing

   h. Use side rails if patient is delirious

   i. Encourage adequate food and fluid intake; offer smaller feedings frequently

   j. Observe isolation technique if pneumonia is caused by bacterial infection

   k. Assist with IPPB treatments

   l. Prevent abdominal distention which will increase respiratory difficulty

      1) Administer laxatives or enemas for regular evacuation

      2) Aid in expulsion of flatus with rectal tube

   (NOTE: Convalescence may be lengthy and activity should be increased gradually with ample time provided for rest.)

C. Pleurisy and empyema

1. Etiology

   a. Dry pleurisy--Complication of pneumonia

   b. Wet pleurisy or pleurisy with effusion--Complication of tuberculosis, lung cancer, heart and kidney diseases, and general infections

INFORMATION SHEET

2. Symptoms
    a. Severe, sharp pain on inspiration which may be referred to the shoulder or abdomen on the affected side
    b. Cough
    c. Dyspnea
    d. Vomiting
    e. Temperature elevation if the fluid becomes purulent and empyema develops
    f. Apprehension and anxiety
3. Treatment
    a. Removal of the underlying cause
    b. Antibiotic therapy to combat the infection
    c. Thoracentesis to aspirate fluid which collects in the pleural space
    d. Antipyretics and analgesics as needed
    e. Oxygen for dyspnea
4. Nursing responsibilities
    a. Reassure the patient
    b. Maintain quiet atmosphere
    c. Position for comfort and ease of breathing
    d. Plan nursing care to provide adequate rest
    e. Administer oxygen as prescribed
    f. Monitor vital signs
    g. Observe for increasing dyspnea
    h. Encourage fluid intake and diet high in calories, protein, vitamins, and minerals
    i. Offer several small feedings daily

INFORMATION SHEET

D. Tuberculosis

1. Etiology--Tubercle bacillus

2. Incidence

    a. Most common infectious disease in this country

    b. Number of cases increasing especially in large cities

    c. Occurs when the body's resistance is lowered by poor nutrition and lack of rest

    d. Causative organism is not killed by ordinary disinfectants but can be killed by boiling, autoclaving, and exposure to sunlight or ultraviolet light

3. Symptoms

    a. No symptoms in early stage

    b. Fatigue

    c. Loss of weight

    d. Slight cough

    e. Slight rise in afternoon temperature

    f. Night sweats

    g. Thick, blood-streaked sputum

4. Diagnostic procedures

    a. Chest x-ray

    b. Frequent sputum examinations

    c. Bronchoscopic examination to secure secretions from lungs or bronchi

    d. Gastric washing

    e. Complete history and physical examination, including laboratory tests

INFORMATION SHEET

5. Treatment
    a. Admission to hospital for extensive tests and examinations
    b. Chemotherapy with streptomycin, para-aminosalicylic acid or PAS and isoniazid in various doses and combinations
    c. Continued drug therapy until the disease is arrested
    d. Surgery in advanced tuberculosis or if medical treatment is unsuccessful
6. Nursing responsibilities
    a. Protect patient and personnel by using respiratory isolation procedures
    b. Provide for and encourage adequate rest
    c. Administer medications as prescribed

X. Allergic conditions

A. Allergic rhinitis or hay fever

1. Etiology--Allergic reaction to a protein substance

    (NOTE: Some allergens which may cause allergic rhinitis are dust, feathers, animals, and pollen from weeds, flowers, or grasses.)

2. Symptoms
    a. Sneezing frequently or violently
    b. Itching of the nose
    c. Profuse watery discharge from nose and eyes
    d. Seasonal recurrence
3. Treatment
    a. Avoidance of the allergen
    b. Air-conditioning to eliminate the allergen
    c. Desensitization

INFORMATION SHEET

- d. Antihistamines for symptomatic relief
- e. Cortisone or ACTH for severe attacks

(NOTE: Patients with allergic rhinitis are seldom admitted to the hospital for treatment of the condition. A patient admitted for treatment of another condition may also suffer from allergic rhinitis which may require consideration when planning nursing care.)

B. Bronchial asthma

1. Etilogy
    - a. Allergy
    - b. Infection
    - c. Emotional tension
2. Symptoms
    - a. Periods of dyspnea
    - b. Wheezing
    - c. Apprehension
    - d. Prolonged expirations
    - e. Profuse perspiration
    - f. Weak pulse
    - g. Nausea and diarrhea
    - h. Pain and tightness in chest
    - i. Cyanosis
    - j. Tight dry cough followed by productive cough
    - k. Thin mucous secretion which increases and becomes thick and stringy
3. Treatment
    - a. Relief of immediate attack--Early administration of sedation and bronchodilators lessens severity of the attack

INFORMATION SHEET

b. Control of causal factors

  1) Identification of the offending allergen may be made through skin tests and the patient may be desensitized

  2) Thorough physical examination aids in detection of internal physical factors so they can be treated

c. General care of the patient

  1) Smoking should be avoided

  2) A program of proper personal care with sufficient sleep, well-balanced diet, and breathing exercises should be carried out

4. Nursing responsibilities

  a. Provide for comfort during an acute attack

    1) Position patient for easier breathing

    2) Administer medications as prescribed

  b. Change clothing and bed linens frequently to keep patient dry and to avoid chilling

  c. Use vaporizer to help loosen secretions for easier expectoration

  d. Encourage intake of fluids

  e. Note effectiveness of medications and treatment

  (NOTE: Some medications used in the treatment of asthma are epinephrine, isoproterenol, potassium iodide, aminophylline, and steroids.)

  f. Observe for signs of adverse reaction

  g. Provide reassurance and support

  h. Assist with intermittent positive pressure breathing (IPPB)

XI. Noninfectious respiratory conditions

A. Epistaxis

1. Physiology

  a. Nasal mucosa is supplied with a network of blood capillaries

  b. Any condition that causes congestion of the mucous membrane may rupture a capillary and result in bleeding

INFORMATION SHEET

c. Epistaxis is rarely fatal but it may cause the patient much anxiety

2. Etiology

   a. Hypertension

   b. Cardiovascular disease

   c. Blood dyscrasias

   d. Some communicable diseases such as measles or pertussis

   e. Trauma

   f. Focal infections such as rhinitis or sinusitis

3. Symptoms--Excessive or persistent bleeding from the nose

4. Treatment and nursing responsibilities

   a. Place patient in sitting position

   b. Apply pressure by holding the nose firmly with the thumb and the forefinger for ten minutes or longer

   c. Apply cold compresses to the nose

   d. Instruct the patient not to blow the nose

   e. Seek medical assistance if the bleeding continues or is profuse

   f. Provide the same care as given a patient following nasal surgery if the physician packs the nose with gauze to control bleeding

B. Bronchiectasis

1. Physiology

   a. One or more of the bronchi are permanently dilated

   b. A single lobe of one lung or one or more lobes in both lungs may be affected

INFORMATION SHEET

   c. The left lung is involved more often than the right, but approximately fifty percent of patients are affected in both lungs

   d. Saclike cavities may form and fill with pus

   e. It is seldom fatal but is usually chronic

   f. It primarily affects young people, twenty years of age or younger

2. Etiology

   a. Secondary to an infection such as tuberculosis, influenza, pneumonia, or chronic sinusitis

   b. Complication of measles or whooping cough

   c. Any obstruction of the bronchial tubes

   d. Congenital or hereditary tendency

3. Symptoms

   a. Asymptomatic in early stages

   b. Cough which produces greenish yellow sputum with a foul odor

   c. Severe coughing on arising or changing position

   d. Hemoptysis

   e. Fever

   f. Chills

   g. Fatigue

   h. Loss of weight and appetite

   i. Clubbing of the fingers

4. Treatment

   a. Palliative treatment to improve general health

   b. Elimination of smoking, alcohol, and excessive exercise

INFORMATION SHEET

c. Sputum cultures and appropriate antibiotic therapy

d. Prevention by prompt attention to such conditions as bronchial asthma and bronchitis

e. Surgery if only a small part of the lung is affected

5. Nursing responsibilities

a. Assist with postural drainage

b. Encourage patient to cough and breathe deeply

c. Provide for additional rest

d. Give mouth care frequently because the sputum leaves an offensive taste and breath odor

e. Observe closely for respiratory distress

C. Pulmonary emphysema

1. Physiology

a. The branches of the bronchi end in millions of tiny air sacs or alveoli where the exchange of carbon dioxide and oxygen takes place

b. Inhaling particles from polluted air or smoking can clog some of the minute passages

c. The alveoli thus clogged cannot exhale and carbon dioxide is trapped in them

d. Gradually the fragile walls of the alveoli lose their elasticity and increasing amounts of carbon dioxide and air are trapped

e. When the person affected is unable to exhale normally, the heart begins to work harder and harder to supply the oxygen needed by the tissues

f. The end result of emphysema is frequently congestive heart failure

2. Etiology

a. Chronic bronchitis

b. Chronic bronchial asthma

INFORMATION SHEET

    c. Bronchiectasis
    d. Air pollution
    e. Smoking
    f. Aging

3. Symptoms
    a. Dyspnea after slightest exertion
    b. Wheezing
    c. Chronic cough with expectoration of mucus and pus
    d. Pale, drawn appearance
    e. Increasing difficulty in breathing
    f. Lethargy in advanced stages
4. Treatment
    a. Drugs to dilate the bronchial tubes and relieve breathlessness

       Examples: Adrenalin, aminophylline, or ephedrine
    b. Expectorants and postural drainage
    c. Antibiotics to control infections
    d. Breathing exercises to use the diaphragm more and to relieve the chest muscles
    e. Blowing exercises to improve breathing
    f. Eliminating or decreasing smoking
5. Nursing responsibilities
    a. Administer prescribed medications promptly
    b. Assist with intermittent positive pressure breathing (IPPB)
    c. Administer oxygen only as prescribed and for very short periods
    d. Observe for restlessness, apprehension, flushed skin, shallow respirations, and stupor
    e. Encourage patient to remain active and follow a daily program of regulated exercise

INFORMATION SHEET

- f. Provide a hot drink on awakening to help loosen secretions
- g. Provide a nourishing diet
- h. Encourage fluids to prevent dehydration
- i. Keep nose and mouth clean

D. Pulmonary embolism

1. Physiology
    - a. When a pulmonary artery is obstructed by an embolus, reflex action may cause a spasm of the pulmonary arteries
    - b. Pulmonary hypertension follows, overloading the heart and when severe enough may cause congestive heart failure
    - c. If a small artery is obstructed the tissue becomes ischemic and atelectasis can develop
    - d. The affected area becomes firm, dark red, and airless
    - e. In time the area may heal with recanalization of blood supply and restoration of function to the area
    - f. Larger emboli may cause death within a few minutes or hours
2. Etiology
    - a. Postoperative or postpartum complication
    - b. Venous thrombosis in the lower extremities
    - c. Fat droplet from the marrow of a fractured bone
    - d. Complication of a medical illness such as heart disease or anemia
3. Symptoms
    - a. Sudden severe chest pain
    - b. Dyspnea
    - c. Productive cough with blood-tinged sputum
    - d. Rapid, shallow respirations

INFORMATION SHEET

e. Fever

f. Increased pulse rate

g. Cyanosis and shock in severe cases

4. Treatment

a. Elastic stockings or bandages as an aid to prevention of emboli postoperatively

b. Anticoagulant drugs such as heparin sodium or Dicumarol to prevent further emboli

c. Management of circulatory shock and cardiac involvement

5. Nursing responsibilities

a. Assist with postoperative care to aid in prevention of emboli by turning patient and encouraging coughing, deep breathing, and early ambulation

b. Observe patient closely for symptoms of shock and other adverse reactions

c. Administer anticoagulant medication as prescribed

d. Keep patient on absolute bed rest after embolus occurs

E. Pulmonary edema

1. Physiology

a. Due to cardiac or circulatory diseases the left ventricle of the heart may become weakened and unable to empty itself with each contraction

b. As more blood is pumped into the lungs than the left ventricle can pump out, the blood becomes trapped in the lungs and gradually overflows into the alveoli and bronchioles

c. Edema can also result from impaired circulation due to trauma or chemical irritants

d. Unless treatment is immediate and successful the patient may drown in own lung secretions

INFORMATION SHEET

2. Etiology
   - a. Heart disease--Most frequent cause
   - b. Inhalation of smoke or irritating gases
   - c. Poisoning from barbiturates or narcotics
   - d. Too rapid administration of blood or intravenous infusions
3. Symptoms
   - a. Acute or gradual onset
   - b. Cyanosis
   - c. Slight cough with wheezing
   - d. Weak, rapid pulse
   - e. Gurgling or noisy respirations
   - f. Orthopnea
   - g. Pallor
   - h. Restlessness
   - i. Cold, clammy skin with excessive perspiration
   - j. Frothy sputum
4. Treatment
   - a. Immediate elimination of cause when possible
   - b. Absolute bed rest
   - c. Oxygen
   - d. Medication such as aminophylline to relieve bronchospasm
   - e. Restoration of cardiac function using digitalis or diuretics
   - f. Morphine to relieve anxiety and apprehension
   - g. Use of rotating tourniquets

INFORMATION SHEET

5. Nursing responsibilities

    a. Secure medical assistance immediately

    b. Remain calm and at the patient's bedside until assistance is obtained

    c. Position patient to provide as much comfort as possible

        1) Fowler's position

        2) Position desired by patient

    d. Observe the patient carefully

    e. Support and reassure the patient

    f. Observe patient for depression of respirations if morphine is given

    g. Administer intravenous fluids at proper rate to aid in preventing pulmonary edema, particularly in cardiac or geriatric patients

F. Atelectasis and pneumothorax

1. Physiology--Both conditions result in collapse of the lung, but under different circumstances and for different reasons

2. Etiology of atelectasis

    a. Pressure against the lung due to fluid in the pleural cavity, tumors, enlarged heart, or any abdominal condition that pushes up on the diaphragm

    b. Obstruction within one of the bronchi, such as a foreign body or mucous plug

    c. Postoperative complication

3. Etiology of pneumothorax

    a. Spontaneous as the result of disease or trauma

    b. Chest injury when the membrane covering the lungs is torn, permitting air to enter the pleural space

    (NOTE: Pneumothorax is used as a therapeutic measure with the injection of air into the pleural cavity under controlled conditions.)

INFORMATION SHEET

4. Symptoms
    a. Pain on the affected side
    b. Sudden dyspnea and cyanosis
    c. Drop in blood pressure
    d. Tachycardia
    e. Elevation of temperature
    f. Shock
    g. Diminished breath sounds on auscultation with a stethoscope

    (NOTE: In slowly developing atelectasis the only symptoms may be increasing dyspnea and weakness.)

5. Treatment
    a. Removal of underlying cause
    b. Prevention by avoiding prolonged anesthesia or deep sedation following surgery
    c. Intermittent positive pressure breathing to increase ventilation
    d. X-rays to determine extent
    e. Oxygen administration
    f. Thoracentesis
    g. Closed chest drainage

6. Nursing responsibilities
    a. Provide for patient's comfort
    b. Place in Fowler's position to aid breathing
    c. Administer oxygen as prescribed
    d. Reassure patient
    e. Monitor closed chest drainage

INFORMATION SHEET

XII. Closed chest or water-seal drainage

(NOTE: The pressure inside the chest cavity is lower than the pressure outside the chest. This negative pressure causes air to fill the lungs. After the chest has been opened, following surgery or drainage, it is necessary to prevent air from entering the pleural cavity and causing the lungs to collapse.)

A. Closed chest drainage is the most common method of re-establishing the normal negative pressure of the chest

B. It may be used with or without suction

1. Without suction in the treatment of empyema or following a pneumonectomy

2. With suction for treatment of empyema and always after all thoracotomies except pneumonectomy

C. All connection points must be kept sealed to prevent collapse of the lungs

D. Clamps or hemostats must be kept with the patient at all times; if the tubing is accidently disconnected or a leak develops, the tube or tubes should each be clamped close to the chest wall immediately using two hemostats

E. Tubing should be secured in a manner to permit patient movement and to facilitate drainage

F. Drainage bottles must be kept below the level of the patient's chest

G. Maintenance of the system depends upon the type of system being used and the patient's physical condition

(NOTE: It is each nurse's responsibility to determine what type of drainage is being used and how it is maintained before attempting to care for the patient.)

H. Amount, color, and consistency of drainage should be observed and reported

I. Any changes in the patient's condition or drainage and in the functioning of the drainage system should be reported immediately to the charge nurse

XIII. Cancer of the lungs

A. Incidence

1. Has markedly increased in the last twenty years

2. Appears most often after age forty

INFORMATION SHEET

3. Affects men more than women but incidence in women is increasing

4. Affected directly by smoking

B. Symptoms

1. No symptoms until disease is well advanced

2. First symptom usually coughing and expectoration of blood-streaked sputum

3. Later symptoms include fatigue, weight loss, chest pains, and dyspnea

C. Treatment

1. Bronchoscopy and sputum examination to confirm diagnosis

2. Surgery to remove malignancy

3. Radiation therapy to arrest the spread of the disease temporarily and to provide relief of symptoms

4. Chemotherapy in some cases

D. Prognosis

1. Mortality rate is high since disease is usually well advanced before discovery

2. Pain is severe following extensive surgery and in terminal stage

E. Preoperative nursing responsibilities

1. Provide physical care as needed to improve general physical condition

2. Provide emotional support

   a. Encourage expression of feelings

   b. Report patient's fears and concerns to the appropriate person

   c. Provide for spiritual counseling as indicated

3. Assist with preoperative teaching

   a. Explain nursing procedures that will be carried out

   b. Tell the patient pain is to be expected following surgery but analgesics will be given

INFORMATION SHEET

        c. Inform the patient that blood and other fluids will be given intravenously, oxygen will be administered, and vital signs will be checked frequently for several hours

        d. Instruct in deep breathing, coughing, and how to do arm and shoulder exercises

    4. Encourage adequate food and fluid intake

    5. Encourage ambulation unless contraindicated

F. Postoperative nursing responsibilities

    1. Check vital signs frequently

    2. Administer oxygen as prescribed

    3. Monitor intravenous infusions; avoid too rapid administration which may overload circulation and cause pulmonary edema

    4. Give oral fluids as permitted or tolerated

    5. Monitor drainage system when one is used

    6. Elevate head of bed when vital signs are stable and patient is responding

    7. Change position frequently as prescribed

       (NOTE: Usually the physician will indicate what positions may be used and how often to turn the patient.)

    8. Administer analgesics before coughing and deep breathing exercises if possible

    9. Support chest incision during coughing and deep breathing

    10. Notify the surgeon if the patient is unable to cough and bring up mucus

    11. Assist respiratory and/or physical therapist with treatments

    12. Observe closely for adverse symptoms and report them immediately

        a. Cyanosis

        b. Dyspnea

        c. Acute chest pain

INFORMATION SHEET

        d. Pallor

        e. Increase in pulse rate

        f. Drop in blood pressure

        g. Evidence of bleeding

XIV. Chest wounds

- A. Description
    - 1. Usually are serious surgical emergencies
    - 2. May involve any of the structures of the chest

      (NOTE: Symptoms and treatment depend upon type and extent of injury.)
- B. Nursing responsibilities
    - 1. Observe for dyspnea and hemorrhage
    - 2. Monitor vital signs
    - 3. Administer oxygen for respiratory distress
    - 4. Provide emotional support
        - a. Remain calm
        - b. Keep patient and environment quiet
        - c. Explain procedures to patient
        - d. Reassure patient and family
    - 5. Monitor drainage system

XV. Cancer of the larynx

- A. Incidence
    - 1. Occurs after age of forty-five years usually
    - 2. Affects men more than women
    - 3. Influenced by smoking and use of alcoholic beverages
    - 4. May be hereditary tendency

INFORMATION SHEET

B. Symptoms

  1. Chronic hoarseness

  2. Inability to speak above a whisper

C. Treatment

  1. Radiation if detected early

  2. Surgical removal

  3. Chemotherapy

D. Preoperative preparation

  1. Reassure the patient and the family

  2. Provide information concerning postoperative care

    a. Patient may be fed through a nasogastric tube temporarily

    b. Tracheostomy opening will be permanent but the patient will receive instructions for its care

    c. Instruction for voice training will be given during recovery so the patient will be able to converse

E. Postoperative nursing responsibilities

  1. Provide for nursing personnel to remain with the patient continuously

  2. Suction frequently to keep the tracheostomy tube open; when the airway becomes obstructed, the patient becomes cyanotic very quickly and may die within a few minutes if the obstruction is not removed

  3. Observe for hemoptysis

  4. Provide other care as for any other postoperative patient

  5. Place signal cord near patient at all times

  (NOTE: Everyone concerned with the patient's care should know how to suction the tracheostomy tube. When assigned to care for these patients, ask for instructions about their care.)

INFORMATION SHEET

XVI. Tracheostomy

A. Reasons for inserting a tracheostomy tube

1. Restoration of respirations when there is an obstruction of the mouth or throat
2. Provision of a permanent breathing orifice for the person who has had mouth, larynx, throat, or chest surgery
3. Prevention of respiratory difficulty due to edema following burns or other trauma

B. The tracheostomy tube (Transparencies 1 and 2)

1. Tracheostomy tube is composed of three parts, an outer tube, an inner tube, and an obturator
2. The obturator is placed inside the outer tube with the lower end of the obturator protruding
3. When the outer tube is in place, the obturator is withdrawn and the inner tube is inserted and locked into place
4. Tapes, attached to each side of the outer tube, are tied around the neck snugly to hold the tube in place

C. Nursing care of the patient with a tracheostomy

1. Keep the tapes of the tracheostomy tube snugly tied at all times
2. Provide for humidification of the air which enters the tracheostomy tube in one of the following ways
    a. Use a humidifier in the room
    b. Place patient in an air-conditioned room
    c. Place a small humidifier over the tracheostomy tube
3. Keep an extra tracheostomy set in the patient's unit at all times
4. Use hemostat to keep tracheostomy open when the tracheostomy tube is accidentally expelled; summon medical assistance immediately
5. Keep equipment for cleaning and caring for the tracheostomy tube at the bedside
6. Use sterile technique when suctioning to prevent introduction of pathogens

INFORMATION SHEET

  a. Do not suction while inserting the suction tube

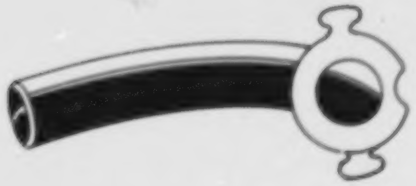
  b. Use intermittent suction while withdrawing the tube

  c. Rotate the tube gently during suctioning

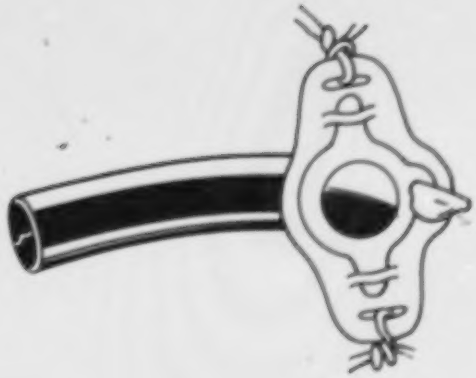
7. Handle tracheostomy parts carefully to prevent damage

8. Reassure the patient while providing care

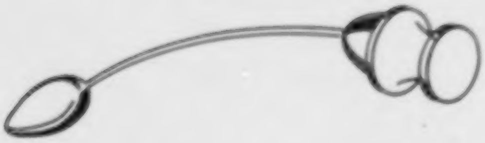
Parts of the Tracheostomy Set



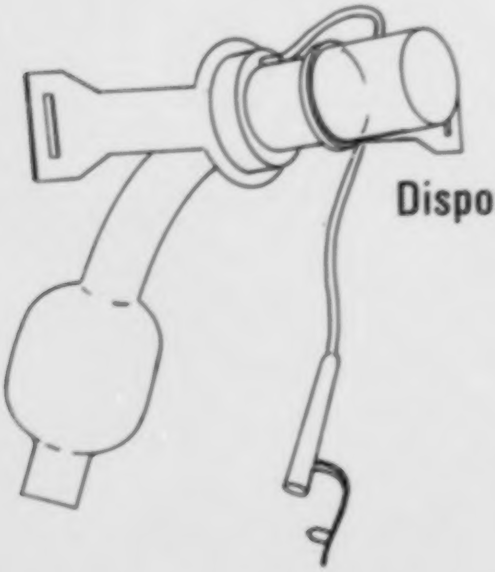
Inner Cannula



Outer Cannula

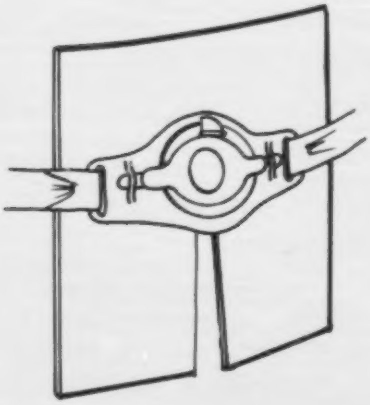


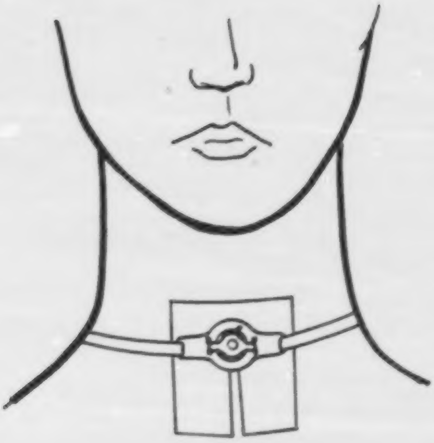
Obturator



Disposable Tracheostomy

Tracheostomy Tube with Dressing





CARING FOR THE PATIENT WITH DISEASES OF THE RESPIRATORY SYSTEM
UNIT III

TEST

1. Match the terms on the right to the correct definition. (Answers for "a" through "o" will be found on this page.)

_____a. Inflammation of the pharynx

_____b. Removal of an entire lobe of a lung

_____c. Examination of the lungs with a special instrument

_____d. Medicine that promotes or modifies the secretions from the lungs

_____e. Inflammation of one or more sinuses

_____f. Provide with another channel or route of blood supply

_____g. Surgical removal of larynx

_____h. Abnormality of the blood

_____i. Aspiration of the chest cavity for removal of fluid

_____j. Spitting of blood or blood-stained sputum from the lungs, trachea, or bronchi

_____k. Inflammation of the lungs associated with exudate in the lumen of the alveoli

_____l. Pleurisy with only a small amount of fluid

_____m. Incision of the thoracic wall

_____n. Formation of an opening into the trachea with the edges of the opening sutured to an opening in the skin

_____o. Acute respiratory infection of specific viral etiology, usually epidemic in nature

1. Dry pleurisy
2. Thoracentesis
3. Sinusitis
4. Influenza
5. Pneumonia
6. Blood dyscrasia
7. Tracheostomy
8. Expectorant
9. Pharyngitis
10. Hemoptysis
11. Bronchoscopy
12. Recanalization
13. Lobectomy
14. Thoracotomy
15. Laryngectomy

(Answers for "p" through "cc" will be found on this page.)

______p. Incision into the trachea

______q. Diminished blood supply to an area due to an obstruction of the circulation

______r. Inflammation of the larynx

______s. Removal of a small portion of lung tissue

______t. Surgical removal of larynx, surrounding tissue, and lymph nodes

______u. Presence of air or gas in the pleural cavity

______v. Pleurisy with a large amount of fluid between the two layers of the pleura

______w. Nosebleed

______x. Removal of an entire lung

______y. Presence of pus in a cavity, hollow organ, or body space

______z. Inflammation of the brain

_____aa. Disease characterized by difficulty in breathing due to spasmodic contractions of the bronchial tubes

_____bb. Having a relieving or soothing, but not curative, action

_____cc. Inflammation of the pleura

16. Pleurisy with effusion
17. Encephalitis
18. Pleurisy
19. Asthma
20. Segmental resection
21. Epistaxis
22. Empyema
23. Pneumothorax
24. Ischemia
25. Pneumonectomy
26. Palliative
27. Laryngitis
28. Radical neck dissection
29. Tracheotomy

2. List eight common symptoms of respiratory distress.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

3. Discuss psychological care of patients with respiratory dysfunction.

4. Describe diagnostic tests and procedures.

   a. Blood studies

b. Sputum examination

c. Pulmonary function tests or Tidal Volume Determination

d. Throat culture

e. Gastric washing

f. X-rays and fluoroscopy

g. Mantoux test

h. Tine test

5. Discuss disorders of the nose which may require surgery.

    a. Deviated septum

        1) Description

2) Treatment

b. Nasal polyps

1) Description

2) Treatment

c. Deformities of the nose

1) Description

2) Treatment

6. Describe postoperative nursing responsibilities for nasal surgery.

7. Discuss infectious conditions of the upper respiratory system.

   a. Acute coryza or common cold

      1) Etiology

      2) Symptoms

   b. Acute pharyngitis

      1) Etiology

      2) Symptoms

   c. Acute laryngitis

      1) Etiology

      2) Symptoms

   d. Tonsillitis

      1) Etiology

      2) Symptoms

e. Sinusitis, acute or chronic

   1) Etiology

   2) Complications

   3) Symptoms

f. Influenza

   1) Etiology

   2) Symptoms

   3) Complications

8. Describe caring for patients with upper respiratory infections.
   a. Treatment

   b. Nursing responsibilities

9. Discuss infectious conditions involving the lungs.
   a. Acute bronchitis
      1) Etiology

      2) Symptoms

      3) Treatment

      4) Nursing responsibilities

b. Pneumonia

   1) Etiology

   2) Symptoms of bacterial pneumonia

   3) Symptoms of viral pneumonia

   4) Treatment

   5) Nursing responsibilities

c. Pleurisy and empyema

1) Etiology

2) Symptoms

3) Treatment

4) Nursing responsibilities

d. Tuberculosis

1) Etiology

2) Incidence

3) Symptoms

4) Diagnostic procedures

5) Treatment

6) Nursing responsibilities

10. Discuss allergic conditions affecting the respiratory system.

    a. Allergic rhinitis or hay fever

        1) Etiology

2) Symptoms

3) Treatment

b. Bronchial asthma

1) Etiology

2) Symptoms

3) Treatment

4) Nursing responsibilities

11. Discuss noninfectious respiratory conditions.

   a. Epistaxis

      1) Physiology

      2) Etiology

      3) Symptoms

      4) Treatment and nursing responsibilities

b. Bronchiectasis

1) Physiology

2) Etiology

3) Symptoms

4) Treatment

5) Nursing responsibilities

c. Pulmonary emphysema

1) Physiology

2) Etiology

3) Symptoms

4) Treatment

5) Nursing responsibilities

d. Pulmonary embolism

1) Physiology

2) Etiology

3) Symptoms

4) Treatment

5) Nursing responsibilities

e. Pulmonary edema

1) Physiology

2) Etiology

3) Symptoms

4) Treatment

5) Nursing responsibilities

f. Atelectasis and pneumothorax

1) Physiology

2) Etiology of atelectasis

3) Etiology of pneumothorax

4) Symptoms

5) Treatment

6) Nursing responsibilities

12. Discuss the use of closed chest or water-seal drainage.

13. Discuss cancer of the lungs.

    a. Incidence

    b. Symptoms

    c. Treatment

    d. Prognosis

    e. Preoperative nursing responsibilities

f. Postoperative nursing responsibilities

14. Describe chest wounds.

a. Description

b. Nursing responsibilities

15. Discuss cancer of the larynx.

a. Incidence

b. Symptoms

c. Treatment

d. Preoperative preparation

e. Postoperative nursing responsibilities

16. Describe tracheostomy.

a. Reasons for inserting a tracheostomy tube

b. Description of the tracheostomy tube

c. Nursing care of the patient with a tracheostomy

CARING FOR THE PATIENT WITH DISEASES OF THE RESPIRATORY SYSTEM
UNIT III

ANSWERS TO TEST

1.
    a. 9
    b. 13
    c. 11
    d. 8
    e. 3
    f. 12
    g. 15
    h. 6
    i. 2
    j. 10
    k. 5
    l. 1
    m. 14
    n. 7
    o. 4
    p. 29
    q. 24
    r. 27
    s. 20
    t. 28
    u. 23
    v. 16
    w. 21
    x. 25
    y. 22
    z. 17
    aa. 19
    bb. 26
    cc. 18

2. Any eight of the following:
    a. Increase in respiratory or pulse rates
    b. Sighing and yawning
    c. Abnormal breathing sounds
    d. Irregular respirations
    e. Restlessness or excitement
    f. Headache
    g. Nausea and vomiting
    h. Anorexia
    i. Decrease in blood pressure
    j. Cyanosis
    k. Muscle twitching

3. Discussion should include:
    a. Difficulty in breathing is a frightening experience
    b. A calm, quiet atmosphere should be maintained

c. Apprehensive relatives can transmit their anxieties to the patient

d. Nursing personnel must stay calm to plan and organize patient care and perform the skills necessary to relieve the symptoms

e. Procedures should be explained to the patient and family using simple terms

f. Changing the patient's position or elevating the head may ease breathing

g. Smoking should not be permitted in the room

h. The number and length of visits of relatives and friends should be limited

4. Description should include:

a. Blood studies

1) Blood tests include RBC, WBC, Hgb, and blood gases determination

2) Marked decrease of RBC or Hgb may indicate that an inadequate amount of oxygen is reaching the tissues

b. Sputum examination

1) Sputum is examined by laboratory personnel but the collection of sputum is a nursing responsibility

2) Sputum must be collected in the correct manner to be of diagnostic value

3) Amount, color, and consistency of sputum should be noted and recorded

4) Papanicolaou test of sputum may be used to detect cancer

c. Pulmonary function tests or Tidal Volume Determination

1) Machines such as the spirometer or the vitalograph are used to measure the amount of air taken in and out in one breath

2) Testing aids in determining the patient's general respiratory status as well as the effect of treatment or medication on respiratory function

3) Tests are carried out by laboratory personnel, but nursing personnel should explain the purpose of the test and reassure the patient

d. Throat culture

1) A culture is made from the mucus or secretions from the back of the throat

2) Drug sensitivity tests are performed on the culture to determine which drug will be most effective in treatment

e. Gastric washing

1) Gastric washings may be done to detect tuberculosis or to identify cancer cells

2) Patients who are unable to cough up sputum or who have little sputum may swallow it

3) Gastric contents are removed through a nasogastric tube by gentle aspiration and are cultured

4) Patient is NPO prior to the test

f. X-rays and fluoroscopy

1) Many hospitals require routine chest x-rays on all patients

2) Chest x-ray can be taken without removing the hospital gown but all other clothing should be removed

3) Pins or other metal fasteners should not be used

4) Nursing personnel explain the purpose of the procedure to the patient and prepare the patient for the examination

g. Mantoux test

1) A small amount of tuberculin serum, about 0.1 cc, is injected intradermally forming a wheal

2) Two days later the infection site is examined for edema or reddened area

3) A positive reaction indicates the person has been exposed to tuberculosis and should have a chest x-ray

4) Once the Mantoux test is positive, it almost always remains so for life

h. Tine test

1) Tuberculin adhering to metal tines is inoculated by pressure into the skin

2) The inoculated area is examined two to three days later for presence of a reddened area at the site

5. Discussion should include:
    a. Deviated septum
        1) Description
            a) Deformity of the septum that interferes with the drainage of one nostril or the sinuses
            b) Usually caused by injury or fracture
        2) Treatment--Submucous resection
    b. Nasal polyps
        1) Description
            a) Are tumors which resemble small bunches of grapes attached to the mucous membrane of the nose
            b) May cause obstruction
            c) Tend to recur
            d) May be due to prolonged sinusitis
        2) Treatment--Surgical removal
    c. Deformities of the nose
        1) Description--Any deviation from the normal in size or shape either congenital or acquired through fracture, laceration, freezing, or similar injury
        2) Treatment
            a) Rhinoplasty--Plastic surgery of the nose
            b) Rhinorrhaphy--Plastic reduction in the size of the nose
6. Description should include:
    a. Observe for hemorrhage
        1) External
            a) On dressings
            b) From the nostrils
        2) Internal due to swallowing blood
            a) Nausea
            b) Coffee-grounds or dark emesis
        3) Expectorating bright red blood

- b. Elevate the head of the bed to facilitate breathing and swallowing
- c. Check nasal packing frequently for placement
- d. Give mouth care frequently
- e. Observe for signs of choking or difficulty in swallowing
- f. Provide ice chips, if permitted, to keep mouth moist

7. Discussion should include:
    - a. Acute coryza or common cold
        - 1) Etiology--One or several viruses
        - 2) Symptoms--Usually last about one week
            - a) Chilly feeling
            - b) Sneezing
            - c) Dry, congested nasal membranes
            - d) Slight throat irritation
            - e) Thin serous discharge
    - b. Acute pharyngitis
        - 1) Etiology
            - a) Viruses
            - b) Bacteria such as hemolytic streptococcus, Staphylococcus aureus, or Hemophilus influenzae
        - 2) Symptoms
            - a) Inflamed, red throat
            - b) Tenderness in tonsils and cervical lymph nodes
            - c) Dry cough
    - c. Acute laryngitis
        - 1) Etiology
            - a) Pathogens
            - b) Secondary to other upper respiratory conditions

2) Symptoms

a) Hoarseness

b) Loss of voice

c) Cough

d. Tonsillitis

1) Etiology

a) Streptococci

b) Staphylococci

2) Symptoms

a) Sore, painful throat

b) Difficulty in swallowing

c) Generalized aching

d) Chills

e) Fever

f) Nausea

g) Vomiting

e. Sinusitis, acute or chronic

1) Etiology

a) Obstructions of the nose

b) Complication of acute coryza, influenza, or pneumonia

c) Allergies

2) Complications

a) Middle ear infection

b) Meningitis

c) Bronchiectasis

d) Asthma

3) Symptoms
    a) Pain over affected sinus
    b) Low grade fever
    c) Fatigue
    d) Poor appetite
    e) Purulent nasal discharge
    f) Throat irritation

f. Influenza
  1) Etiology--Virus strains, type A, B, or C
  2) Symptoms
    a) Sudden onset
    b) Muscular pains
    c) Fever for two or three days
    d) Headache
    e) Sensitivity to light
    f) Chills
    g) Nausea and vomiting
    h) Diarrhea
    i) Sneezing and nasal discharge
    j) Cough and sore throat
  3) Complications
    a) Susceptibility to lung disorders
    b) Chronic sinusitis
    c) Chronic bronchitis
    d) Ear infections
    e) Heart disease
    f) Encephalitis
    g) Harmful effects on pregnancy

8. Description should include:
   a. Treatment
      1) Bed rest if fever is present
      2) Limiting contact to avoid spreading the infection to others
      3) Antibiotics for bacterial infections
      4) Symptomatic relief using antipyretics, analgesics, antihistamines, hot saline gargles, cough mixtures, or mild sedatives
      5) Increased humidity with vaporizers
   b. Nursing responsibilities
      1) Keep patient at bed rest
      2) Observe aseptic techniques, particularly handwashing and safe disposal of contaminated tissues
      3) Encourage fluid intake
      4) Position patient for ease of breathing, usually low Fowler's position
      5) Provide adequate cover but avoid overheating
      6) Observe for possible complications
9. Discussion should include:
   a. Acute bronchitis
      1) Etiology
         a) Secondary to upper respiratory infection
         b) Exposure to chemical agents
         c) Complication of measles
      2) Symptoms
         a) Hoarseness
         b) Dry, painful cough that gradually becomes productive
         c) Slight temperature elevation
         d) Muscular aching
         e) Headache

3) Treatment

   a) Symptomatic relief

   b) Prevention of complications

   c) Change of occupation if indicated

   d) General care to promote health

   e) Limit amount of smoking

4) Nursing responsibilities

   a) Maintain bed rest while temperature is elevated

   b) Increase humidity with vaporizer

   c) Check vital signs regularly

   d) Administer sedatives or expectorants as prescribed

   e) Observe for signs of complications

b. Pneumonia

1) Etiology

   a) Bacterial--Pneumoccus or streptococcus

   b) Viral--Virus

   c) Hypostatic--Permitting patient to remain in one position too long

   d) Aspiration--From fluid or other substances which get into the lungs

2) Symptoms of bacterial pneumonia

   a) Severe, sharp pain in chest

   b) Chill followed by high fever

   c) Rapid pulse and respirations

   d) Painful, constant cough

   e) Clear or blood-tinged sputum which develops a characteristic rusty appearance within 48 hours

   f) Orthopnea

    g) Leukocytosis with the number of white blood cells from 20,000 to 30,000
    h) Restlessness
    i) Possible mental changes such as anxiety or delirium

3) Symptoms of viral pneumonia
    a) Chilling sensation or chills
    b) Irregular temperature elevation for several days
    c) Profuse perspiration
    d) Aching
    e) Painful cough
    f) Mucopurulent sputum; may be blood-tinged
    g) Normal white count

4) Treatment
    a) Blood culture and/or sputum tests to determine causative organism
    b) Sensitivity tests on cultures to determine effective antibiotics
    c) Chest x-rays to determine lung involvement
    d) Analgesics such as meperidine or anileridine to relieve pain
    e) Increased humidity with vaporizers
    f) Administration of oxygen
    g) Codeine or cough syrups to alleviate coughing
    h) Antipyretics such as aspirin
    i) Antibiotics may include penicillin, streptomycin, tetracycline, chloramphenicol, erythromycin, or sulfonamides

5) Nursing responsibilities
    a) Plan nursing care to provide adequate rest and quiet
    b) Monitor vital signs regularly; report increase in pulse or increasing dyspnea

c) Position patient in Fowler's position or orthopneic position to ease breathing

d) Measure intake and output

e) Change bed linens as needed to keep patient clean and dry

f) Give mouth care frequently

g) Encourage patient to cough and expectorate mucus; splint chest during coughing

h) Use side rails if patient is delirious

i) Encourage adequate food and fluid intake; offer smaller feedings frequently

j) Observe isolation technique if pneumonia is caused by bacterial infection

k) Assist with IPPB treatments

l) Prevent abdominal distention which will increase respiratory difficulty

  (1) Administer laxatives or enemas for regular evacuation

  (2) Aid in expulsion of flatus with rectal tube

c. Pleurisy and empyema

1) Etiology

a) Dry pleurisy--Complication of pneumonia

b) Wet pleurisy or pleurisy with effusion--Complication of tuberculosis, lung cancer, heart and kidney diseases, and general infections

2) Symptoms

a) Severe, sharp pain on inspiration which may be referred to the shoulder or abdomen on the affected side

b) Cough

c) Dyspnea

d) Vomiting

e) Temperature elevation if the fluid becomes purulent and empyema develops

f) Apprehension and anxiety

3) Treatment

a) Removal of the underlying cause

b) Antibiotic therapy to combat the infection

c) Thoracentesis to aspirate fluid which collects in the pleural space

d) Antipyretics and analgesics as needed

e) Oxygen for dyspnea

4) Nursing responsibilities

a) Reassure the patient

b) Maintain quiet atmosphere

c) Position for comfort and ease of breathing

d) Plan nursing care to provide adequate rest

e) Administer oxygen as prescribed

f) Monitor vital signs

g) Observe for increasing dyspnea

h) Encourage fluid intake and diet high in calories, protein, vitamins, and minerals

i) Offer several small feedings daily

d. Tuberculosis

1) Etiology--Tubercle bacillus

2) Incidence

a) Most common infectious disease in this country

b) Number of cases increasing especially in large cities

c) Occurs when the body's resistance is lowered by poor nutrition and lack of rest

d) Causative organism is not killed by ordinary disinfectants but can be killed by boiling, autoclaving, and exposure to sunlight or ultraviolet light

3) Symptoms
    a) No symptoms in early stage
    b) Fatigue
    c) Loss of weight
    d) Slight cough
    e) Slight rise in afternoon temperature
    f) Night sweats
    g) Thick, blood-streaked sputum

4) Diagnostic procedures
    a) Chest x-ray
    b) Frequent sputum examinations
    c) Bronchoscopic examination to secure secretions from lungs or bronchi
    d) Gastric washing
    e) Complete history and physical examination, including laboratory tests

5) Treatment
    a) Admission to hospital for extensive tests and examinations
    b) Chemotherapy with streptomycin, para-aminosalicylic acid or PAS and isoniazid in various doses and combinations
    c) Continued drug therapy until the disease is arrested
    d) Surgery in advanced tuberculosis or if medical treatment is unsuccessful

6) Nursing responsibilities
    a) Protect patient and personnel by using respiratory isolation procedures
    b) Provide for and encourage adequate rest
    c) Administer medications as prescribed

10. Discussion should include:

a. Allergic rhinitis or hay fever

- 1) Etiology--Allergic reaction to a protein substance
- 2) Symptoms
  - a) Sneezing frequently or violently
  - b) Itching of the nose
  - c) Profuse watery discharge from nose and eyes
  - d) Seasonal recurrence
- 3) Treatment
  - a) Avoidance of the allergen
  - b) Air-conditioning to eliminate the allergen
  - c) Desensitization
  - d) Antihistamines for symptomatic relief
  - e) Cortisone or ACTH for severe attacks

b. Bronchial asthma

- 1) Etiology
  - a) Allergy
  - b) Infection
  - c) Emotional tension
- 2) Symptoms
  - a) Periods of dyspnea
  - b) Wheezing
  - c) Apprehension
  - d) Prolonged expirations
  - e) Profuse perspiration
  - f) Weak pulse
  - g) Nausea and diarrhea

- h) Pain and tightness in chest
- i) Cyanosis
- j) Tight dry cough followed by productive cough
- k) Thin mucous secretion which increases and becomes thick and stringy

3) Treatment

- a) Relief of immediate attack--Early administration of sedation and bronchodilators lessens severity of the attack
- b) Control of causal factors
  - (1) Identification of the offending allergen may be made through skin tests and the patient may be desensitized
  - (2) Thorough physical examination aids in detection of internal physical factors so they can be treated
- c) General care of the patient
  - (1) Smoking should be avoided
  - (2) A program of proper personal care with sufficient sleep, well-balanced diet, and breathing exercises should be carried out

4) Nursing responsibilities

- a) Provide for comfort during an acute attack
  - (1) Position patient for easier breathing
  - (2) Administer medications as prescribed
- b) Change clothing and bed linens frequently to keep patient dry and to avoid chilling
- c) Use vaporizer to help loosen secretions for easier expectoration
- d) Encourage intake of fluids
- e) Note effectiveness of medications and treatment
- f) Observe for signs of adverse reaction
- g) Provide reassurance and support

h) Assist with intermittent positive pressure breathing (IPPB)

11. Discussion should include:

a. Epistaxis

1) Physiology

a) Nasal mucosa is supplied with a network of blood capillaries

b) Any condition that causes congestion of the mucous membrane may rupture a capillary and result in bleeding

c) Epistaxis is rarely fatal but it may cause the patient much anxiety

2) Etiology

a) Hypertension

b) Cardiovascular disease

c) Blood dyscrasias

d) Some communicable diseases such as measles or pertussis

e) Trauma

f) Focal infections such as rhinitis or sinusitis

3) Symptoms--Excessive or persistent bleeding from the nose

4) Treatment and nursing responsibilities

a) Place patient in sitting position

b) Apply pressure by holding the nose firmly with the thumb and the forefinger for ten minutes or longer

c) Apply cold compresses to the nose

d) Instruct the patient not to blow the nose

e) Seek medical assistance if the bleeding continues or is profuse

f) Provide the same care as given a patient following nasal surgery if the physician packs the nose with gauze to control bleeding

b. Bronchiectasis

1) Physiology

a) One or more of the bronchi are permanently dilated

b) A single lobe of one lung or one or more lobes in both lungs may be affected

c) The left lung is involved more often than the right, but approximately fifty percent of patients are affected in both lungs

d) Saclike cavities may form and fill with pus

e) It is seldom fatal but is usually chronic

f) It primarily affects young people, twenty years of age or younger

2) Etiology

a) Secondary to an infection such as tuberculosis, influenza, pneumonia, or chronic sinusitis

b) Complication of measles or whooping cough

c) Any obstruction of the bronchial tubes

d) Congenital or hereditary tendency

3) Symptoms

a) Asymptomatic in early stages

b) Cough which produces greenish yellow sputum with a foul odor

c) Severe coughing on arising or changing position

d) Hemoptysis

e) Fever

f) Chills

g) Fatigue

h) Loss of weight and appetite

i) Clubbing of the fingers

4) Treatment

- a) Palliative treatment to improve general health
- b) Elimination of smoking, alcohol, and excessive exercise
- c) Sputum cultures and appropriate antibiotic therapy
- d) Prevention by prompt attention to such conditions as bronchial asthma and bronchitis
- e) Surgery if only a small part of the lung is affected

5) Nursing responsibilities

- a) Assist with postural drainage
- b) Encourage patient to cough and breathe deeply
- c) Provide for additional rest
- d) Give mouth care frequently because the sputum leaves an offensive taste and breath odor
- e) Observe closely for respiratory distress

c. Pulmonary emphysema

1) Physiology

- a) The branches of the bronchi end in millions of tiny air sacs or alveoli where the exchange of carbon dioxide and oxygen takes place
- b) Inhaling particles from polluted air or smoking can clog some of the minute passages
- c) The alveoli thus clogged cannot exhale and carbon dioxide is trapped in them
- d) Gradually the fragile walls of the alveoli lose their elasticity and increasing amounts of carbon dioxide and air are trapped
- e) When the person affected is unable to exhale normally, the heart begins to work harder and harder to supply the oxygen needed by the tissues
- f) The end result of emphysema is frequently congestive heart failure

2) Etiology

   a) Chronic bronchitis

   b) Chronic bronchial asthma

   c) Bronchiectasis

   d) Air pollution

   e) Smoking

   f) Aging

3) Symptoms

   a) Dyspnea after slightest exertion

   b) Wheezing

   c) Chronic cough with expectoration of mucus and pus

   d) Pale, drawn appearance

   e) Increasing difficulty in breathing

   f) Lethargy in advanced stages

4) Treatment

   a) Drugs to dilate the bronchial tubes and relieve breathlessness

   b) Expectorants and postural drainage

   c) Antibiotics to control infections

   d) Breathing exercises to use the diaphragm more and to relieve the chest muscles

   e) Blowing exercises to improve breathing

   f) Eliminating or decreasing smoking

5) Nursing responsibilities

   a) Administer prescribed medications promptly

   b) Assist with intermittent positive pressure breathing (IPPB)

   c) Administer oxygen only as prescribed and for very short periods

   d) Observe for restlessness, apprehension, flushed skin, shallow respirations, and stupor

- e) Encourage patient to remain active and follow a daily program of regulated exercise
- f) Provide a hot drink on awakening to help loosen secretions
- g) Provide a nourishing diet
- h) Encourage fluids to prevent dehydration
- i) Keep nose and mouth clean

d. Pulmonary embolism

1) Physiology

- a) When a pulmonary artery is obstructed by an embolus, reflex action may cause a spasm of the pulmonary arteries
- b) Pulmonary hypertension follows, overloading the heart and when severe enough may cause congestive heart failure
- c) If a small artery is obstructed the tissue becomes ischemic and atelectasis can develop
- d) The affected area becomes firm, dark red, and airless
- e) In time the area may heal with recanalization of blood supply and restoration of function to the area
- f) Larger emboli may cause death within a few minutes or hours

2) Etiology

- a) Postoperative or postpartum complication
- b) Venous thrombosis in the lower extremities
- c) Fat droplet from the marrow of a fractured bone
- d) Complication of a medical illness such as heart disease or anemia

3) Symptoms

- a) Sudden severe chest pain
- b) Dyspnea
- c) Productive cough with blood-tinged sputum
- d) Rapid, shallow respirations
- e) Fever

f) Increased pulse rate

g) Cyanosis and shock in severe cases

4) Treatment

a) Elastic stockings or bandages as an aid to prevention of emboli postoperatively

b) Anticoagulant drugs such as heparin sodium or Dicumarol to prevent further emboli

c) Management of circulatory shock and cardiac involvement

5) Nursing responsibilities

a) Assist with postoperative care to aid in prevention of emboli by turning patient and encouraging coughing, deep breathing, and early ambulation

b) Observe patient closely for symptoms of shock and other adverse reactions

c) Administer anticoagulant medication as prescribed

d) Keep patient on absolute bed rest after embolus occurs

e. Pulmonary edema

1) Physiology

a) Due to cardiac or circulatory diseases the left ventricle of the heart may become weakened and unable to empty itself with each contraction

b) As more blood is pumped into the lungs than the left ventricle can pump out, the blood becomes trapped in the lungs and gradually overflows into the alveoli and bronchioles

c) Edema can also result from impaired circulation due to trauma or chemical irritants

d) Unless treatment is immediate and successful the patient may drown in own lung secretions

2) Etiology

a) Heart disease--Most frequent cause

b) Inhalation of smoke or irritating gases

- c) Poisoning from barbiturates or narcotics
- d) Too rapid administration of blood or intravenous infusions

3) Symptoms
    - a) Acute or gradual onset
    - b) Cyanosis
    - c) Slight cough with wheezing
    - d) Weak, rapid pulse
    - e) Gurgling or noisy respirations
    - f) Orthopnea
    - g) Pallor
    - h) Restlessness
    - i) Cold, clammy skin with excessive perspiration
    - j) Frothy sputum

4) Treatment
    - a) Immediate elimination of cause when possible
    - b) Absolute bed rest
    - c) Oxygen
    - d) Medication such as aminophylline to relieve bronchospasm
    - e) Restoration of cardiac function using digitalis or diuretics
    - f) Morphine to relieve anxiety and apprehension
    - g) Use of rotating tourniquets

5) Nursing responsibilities
    - a) Secure medical assistance immediately
    - b) Remain calm and at the patient's bedside until assistance is obtained

      - c) Position patient to provide as much comfort as possible
        - (1) Fowler's position
        - (2) Position desired by patient
      - d) Observe the patient carefully
      - e) Support and reassure the patient
      - f) Observe patient for depression of respirations if morphine is given
      - g) Administer intravenous fluids at proper rate to aid in preventing pulmonary edema, particularly in cardiac or geriatric patients

- f. Atelectasis and pneumothorax
  - 1) Physiology--Both conditions result in collapse of the lung, but under different circumstances and for different reasons
  - 2) Etiology of atelectasis
    - a) Pressure against the lung due to fluid in the pleural cavity, tumors, enlarged heart, or any abdominal condition that pushes up on the diaphragm
    - b) Obstruction within one of the bronchi, such as a foreign body or mucous plug
    - c) Postoperative complication
  - 3) Etiology of pneumothorax
    - a) Spontaneous as the result of disease or trauma
    - b) Chest injury when the membrane covering the lungs is torn, permitting air to enter the pleural space
  - 4) Symptoms
    - a) Pain on the affected side
    - b) Sudden dyspnea and cyanosis
    - c) Drop in blood pressure
    - d) Tachycardia
    - e) Elevation of temperature
    - f) Shock
    - g) Diminished breath sounds on auscultation with a stethoscope

5) Treatment

a) Removal of underlying cause

b) Prevention by avoiding prolonged anesthesia or deep sedation following surgery

c) Intermittent positive pressure breathing to increase ventilation

d) X-rays to determine extent

e) Oxygen administration

f) Thoracentesis

g) Closed chest drainage

6) Nursing responsibilities

a) Provide for patient's comfort

b) Place in Fowler's position to aid breathing

c) Administer oxygen as prescribed

d) Reassure patient

e) Monitor closed chest drainage

12. Discussion should include:

a. Closed chest drainage is the most common method of re-establishing the normal negative pressure of the chest

b. It may be used with or without suction

1) Without suction in the treatment of empyema or following a pneumonectomy

2) With suction for treatment of empyema and always after all thoracotomies except pneumonectomy

c. All connection points must be kept sealed to prevent collapse of the lungs

d. Clamps or hemostats must be kept with the patient at all times; if the tubing is accidently disconnected or a leak develops, the tube or tubes should each be clamped close to the chest wall immediately using two hemostats

e. Tubing should be secured in a manner to permit patient movement and to facilitate drainage

f. Drainage bottles must be kept below the level of the patient's chest

g. Maintenance of the system depends upon the type of system being used and the patient's physical condition

h. Amount, color, and consistency of drainage should be observed and reported

i. Any changes in the patient's condition or drainage and in the functioning of the drainage system should be reported immediately to the charge nurse

13. Discussion should include:

a. Incidence

1) Has markedly increased in the last twenty years

2) Appears most often after age forty

3) Affects men more than women but incidence in women is increasing

4) Affected directly by smoking

b. Symptoms

1) No symptoms until disease is well advanced

2) First symptom usually coughing and expectoration of blood-streaked sputum

3) Later symptoms include fatigue, weight loss, chest pains, and dyspnea

c. Treatment

1) Bronchoscopy and sputum examination to confirm diagnosis

2) Surgery to remove malignancy

3) Radiation therapy to arrest the spread of the disease temporarily and to provide relief of symptoms

4) Chemotherapy in some cases

d. Prognosis

1) Mortality rate is high since disease is usually well advanced before discovery

2) Pain is severe following extensive surgery and in terminal stage

e. Preoperative nursing responsibilities

  1) Provide physical care as needed to improve general physical condition

  2) Provide emotional support

    a) Encourage expression of feelings

    b) Report patient's fears and concerns to the appropriate person

    c) Provide for spiritual counseling as indicated

  3) Assist with preoperative teaching

    a) Explain nursing procedures that will be carried out

    b) Tell the patient pain is to be expected following surgery but analgesics will be given

    c) Inform the patient that blood and other fluids will be given intravenously, oxygen will be administered, and vital signs will be checked frequently for several hours

    d) Instruct in deep breathing, coughing, and how to do arm and shoulder exercises

  4) Encourage adequate food and fluid intake

  5) Encourage ambulation unless contraindicated

f. Postoperative nursing responsibilities

  1) Check vital signs frequently

  2) Administer oxygen as prescribed

  3) Monitor intravenous infusions; avoid too rapid administration which may overload circulation and cause pulmonary edema

  4) Give oral fluids as permitted or tolerated

  5) Monitor drainage system when one is used

  6) Elevate head of bed when vital signs are stable and patient is responding

  7) Change position frequently as prescribed

  8) Administer analgesics before coughing and deep breathing exercises if possible

9) Support chest incision during coughing and deep breathing

10) Notify the surgeon if the patient is unable to cough and bring up mucus

11) Assist respiratory and/or physical therapist with treatments

12) Observe closely for adverse symptoms and report them immediately

a) Cyanosis

b) Dyspnea

c) Acute chest pain

d) Pallor

e) Increase in pulse rate

f) Drop in blood pressure

g) Evidence of bleeding

14. Description should include:

a. Description

1) Usually are serious surgical emergencies

2) May involve any of the structures of the chest

b. Nursing responsibilities

1) Observe for dyspnea and hemorrhage

2) Monitor vital signs

3) Administer oxygen for respiratory distress

4) Provide emotional support

a) Remain calm

b) Keep patient and environment quiet

c) Explain procedures to patient

d) Reassure patient and family

        5) Monitor drainage system

15. Discussion should include:

    a. Incidence

        1) Occurs after age of forty-five years usually

        2) Affects men more than women

        3) Influenced by smoking and use of alcoholic beverages

        4) May be hereditary tendency

    b. Symptoms

        1) Chronic hoarseness

        2) Inability to speak above a whisper

    c. Treatment

        1) Radiation if detected early

        2) Surgical removal

        3) Chemotherapy

    d. Preoperative preparation

        1) Reassure the patient and the family

        2) Provide information concerning postoperative care

            a) Patient may be fed through a nasogastric tube temporarily

            b) Tracheostomy opening will be permanent but the patient will receive instructions for its care

            c) Instruction for voice training will be given during recovery so the patient will be able to converse

    e. Postoperative nursing responsibilities

        1) Provide for nursing personnel to remain with the patient continuously

        2) Suction frequently to keep the tracheostomy tube open; when the airway becomes obstructed, the patient becomes cyanotic very quickly and may die within a few minutes if the obstruction is not removed

3) Observe for hemoptysis

4) Provide other care as for any other postoperative patient

5) Place signal cord near patient at all times

16. Description should include:

a. Reasons for inserting a tracheostomy tube

1) Restoration of respirations when there is an obstruction of the mouth or throat

2) Provision of a permanent breathing orifice for the person who has had mouth, larynx, throat, or chest surgery

3) Prevention of respiratory difficulty due to edema following burns or other trauma

b. The tracheostomy tube

1) Tracheostomy tube is composed of three parts, an outer tube, an inner tube, and an obturator

2) The obturator is placed inside the outer tube with the lower end of the obturator protruding

3) When the outer tube is in place, the obturator is withdrawn and the inner tube is inserted and locked into place

4) Tapes, attached to each side of the outer tube, are tied around the neck snugly to hold the tube in place

c. Nursing care of the patient with a tracheostomy

1) Keep the tapes of the tracheostomy tube snugly tied at all times

2) Provide for humidification of the air which enters the tracheostomy tube in one of the following ways

a) Use a humidifier in the room

b) Place patient in an air-conditioned room

c) Place a small humidifier over the tracheostomy tube

3) Keep an extra tracheostomy set in the patient's unit at all times

4) Use hemostat to keep tracheostomy open when the tracheostomy tube is accidentally expelled; summon medical assistance immediately

5) Keep equipment for cleaning and caring for the tracheostomy tube at the bedside

6) Use sterile technique when suctioning to prevent introduction of pathogens

   a) Do not suction while inserting the suction tube

   b) Use intermittent suction while withdrawing the tube

   c) Rotate the tube gently during suctioning

7) Handle tracheostomy parts carefully to prevent damage

8) Reassure the patient while providing care